IMU CET EXAM
FULL PACKAGE

Way2ship®

CAREER

A

SEA

IMU UG COURSES

- DNS (Applied Nautical Science)
- B. Sc. Nautical Science
- B. Tech Marine Engineering
- B.Sc. Maritime Science
- Naval Architecture
- Ship Building & Repair

REASONING

GENERAL APTITUDE
IMU CET TEST
PHYSICS MCQs
MOCK TEST PAPER
CHEMISTRY
ENGLISH LANGUAGE
MATHEMATICS

SERIES

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MOCK TEST - 1

MATH MOCK TEST

Marks: 50

1. The binary relation S = F (empty set) on set A = {1, 2,3} is
A. transitive and relexive
B. symmetric and relexive
C. transitive and symmetric
D. neither reflexive nor symmetric

Answer | C

2. A bag contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the bag, if at least one black ball is to be included in the draw
A. 64   B. 128
C. 132   D. 222

Answer | A

3. Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr. The faster train passes the slower train in 36 seconds. The length of each train is:
A. 50 m   B. 72 m
C. 80 m   D. 82 m

Answer | A

4. Consider a right angle triangle XYZ, XY = a, YZ = b, XZ = 25.6 and angle of X is 37° then values of a and b respectively are
A. 19.604, 40.045   B. 18.604, 42.025
C. 17.406, 21.455   D. 15.406, 20.445

Answer | D

5. A train 360 m long is running at a speed of 45 km/hr. In what time will it pass a bridge 140 m long?
A. 40 sec   B. 42 sec
C. 45 sec   D. 48 sec

Answer | A

6. A TV is purchased at Rs. 5000 and sold at Rs. 4000, find the lost percent.
A. 10%   B. 20%
C. 25%   D. 28%

Answer | B

7. If A and B are matrices, then which from the following is true ?
A. $A + B \neq B + A$ B. $(A^T)^T \neq A$
C. $AB \neq BA$ D. all are true

Answer | C

8. Sum of cos 45° and tan 38° is.
A. 0.4884   B. 2.8484
C. 1.4884   D. 3.4884

Answer | C

9. $X^2 + 4x + 4$ is
A. polynomial   B. equation
C. identity   D. None of Above

Answer | A

1

10. What is the sum of the sequence: 10, 20, 30, ..., 1000 ?
A. 50,000
B. 50,250
C. 50,500
D. 50,750

Answer C

11. π (pi) denotes the ratio of the _____ to the ___ .
A. area of a circle, circumference of the circle
B. area of a circle, length of its diameter
C. circumference of a circle, length of its radius
D. circumference of a circle, length of its diameter

Answer D

12. Besides 1, which of the following number is both squares and triangular number?
A. 25
B. 10
C. 36
D. 80

Answer C

13. The function f(x)=x+1 from the set of integers to itself is onto. Is it True or False?
A. True
B. False

Answer A

14. How many cubes of 10 cm edge can be put in a cubical box of 1 m edge.
A. 10000 cubes
B. 1000 cubes
C. 100 cubes
D. 50 cubes

Answer A

15. Let A = {1, 2, 3} and let R ≅ {(1, 1), (2, 2), (3, 3), (1, 3), (3, 2), (1, 2)}. Then R is
A. reflexive and symmetric but not transitive
B. reflexive and transitive but not symmetric
C. symmetric and transitive but not reflexive
D. an equivalence relation
Explanation: Reflexive and transitive but not symmetric

Answer B

16. The inverse of function $f(x) = x^3 + 2$ is _
A. $f^{-1}(y) = (y-2)^{1/3}$
B. $f^{-1}(y) = (y-2)^{1/3}$
C. $f^{-1}(y) = (y)^{1/3}$
D. $f^{-1}(y) = (y-2)$

Answer B

17. Which of the following property of matrix multiplication is correct:
A. Multiplication is not commutative in general
B. Multiplication is associative
C. Multiplication is distributive over addition
D. All of the mentioned
Explanation: Matrix multiplication is associative, distributive, but not commutative.

Answer D

18. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
A. 24400
B. 21300
C. 210
D. 25200

Answer D

19. The sum of the first 16 terms of an AP whose first term and third term are 5 and 15 respectively is.
A. 600
B. 765
C. 640
D. 680

Answer D

20. If a* b= 2a – 3b + ab, then 3* 5* + 5 * 3 is equal to
A. 22
B. 24
C. 26
D. 28

Answer D

21. In three dimensional coordinate systems, coordinates are
A. perpendicular to each other
B. parallel to each other
C. same direction for each other
D. opposite direction for each other

Answer A

22. The sum of the first 16 terms of an AP whose first term and third term are 5 and 15 respectively is.
A. 600
B. 765
C. 640
D. 680

Answer A

23. In triangle ABC, if angle B = 60°, b = 11 cm and c = 8.7 cm then angle A and length of 'a' is
A. 52°
B. 43.23°
C. 46°
D. 49°

Answer B

24. The mean of the numbers a, b, 8, 5, 10 is 6 and the variance is 6.80 . Then which one of the following gives possible values a and b?
A. a = 1, b = 6
B. a = 3, b = 4
C. a = 0, b = 7
D. a = 5, b = 2

Answer B

25. The g-1({0}) for the function g(x)= x is.
A. $\{x \mid 0 \leqslant x < 1\}$
B. $\{x \mid 0 < x \leqslant 1\}$
C. $\{x \mid 0 < x < 1\}$
D. $\{x \mid 0 \leqslant x \leqslant 1\}$

Answer C

26. A.P whose nth term is 2n-1 is
A. 1,3,6,
B. 2,3,5,
C. 1,3,5,
D. 5,3,1,

Answer C

27. Real part of $2ab(\iota + \iota^2)$ is
A. 2ab
B. –2ab
C. 2abι
D. –2abι

Answer A

28 . Quadratic equation whose roots are a, ß is.
A. $x^2 + (a + ß)x + aß = 0$
B. $x^2 -(a + ß)x -aß = 0$
C. $x^2 + (a + ß)x -aß = 0$
D. $x^2 -(a + ß)x + aß = 0$

Answer D

29. The salaries of A, B and C are of ratio 2:3:5. If the increments of 15%, 10% and 20% are done to their respective salaries, then find the new ratio of their salaries.
A. 20:33:60
B. 21:33:60
C. 22:33:60
D. 23:33:60

Answer D

30. A speaks truth in 75% of cases and B in 80% of cases. In what percentage of cases are they likely to contradict each other, narrating the same incident
A. 30%
B. 35%
C. 40%
D. 45%

Answer B

31. If A = {1, 3, 5, B} and B = {2, 4} then
A. 4 ∈ A
B. {4} ⊂ A
C. B ⊂ A
D. None of these

Answer D

32. The area bounded by the curve $y = x^2 + 2x + 1$, the tangent at (1, 4) and the y-axis is

A. 1   B. $\frac{1}{2}$

C. $\frac{1}{3}$ D. $\frac{1}{4}$

Answer C

33. A sum of Rs 12,500 amounts to Rs. 15,500 in the 4 years at the rate of simple interest. Find the rate percent.

A. 6 %   B. 7 %
C. 8 %   D. 9 %

Answer A

34. Let A and B be two sets in the same universal set. Then $A - B =$

A. $A \cap B$ B. $A' \cap B$
C. $A \cap B'$ D. None of these

Answer C

35. In function $y = f(x)$, 'y' is classified as.

A. dependent variable   B. lower limit variable
C. upper limit variable   D. independent variable

Answer A

36. What is the sum of the sequence: 1, 10, 100, 1000, ... 1,000,000,000 ?

A. 99,999,999,11   B. 11,111,111,90
C. 11,111,111,11   D. 99,999,999,99

Answer C

37. If calculated value of total sum of squares in sample variance is larger than variation in data set is considered as

A. smaller   B. greater
C. zero   D. negative

Answer B

38. If a right angle triangle ABC has 13 as opposite side and hypotenuse is supposed as 'x' then A 47° is.

A. 15.77   B. 17.77
C. 19.77   D. 21.77

Answer B

39. Let n(A) denotes the number of elements in set A. If n(A) =p and n(B) = q, then how many ordered pairs (a, b) are there with a $\in$ A and b $\in$ B ?

A. p x q   B. p + q
C. 2 pq   D. 4 pq

Answer A

40. $(A \cup B) \cup C = ?$

A. $A \cap (B \cup C)$ B. $A \cup (B \cup C)$
C. $A \cup (B \cap C)$ D. π

Answer B

41. $|z_1 - z_2| =$

A. $> |Z|_1 + |Z|_2$ B. $= |Z|_1 + |Z|_2$
C. $= Z_1 + Z_2$ D. $> Z_1 + Z_2$

Answer B

42. Two matrices A and B are equal if

A. both are rectangular
B. both have same order
C. no of columns of A is equal to columns of B
D. both have same order and equal corresponding elements

Answer D

43. A root of the equation, $\sin x + x - 1 = 0$, lies in the interval

A. $(0, \pi/2)$ B. $(-\pi/2, 0)$
C. $(\pi/2, \pi)$ D. $(-\pi, -\pi/2)$

Answer A

44. If $(\lambda^2 + \lambda - 2)x^2 + (\lambda + 2)x < 1, x \in R$, then λ belongs to the interval

A. $(-2, 1)$ B. $(-2, 2/5)$
C. $(2/5, 1)$ D. None of these

Answer D

45. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

A. 159   B. 209
C. 201   D. 212

Answer B

46. In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?

A. 610   B. 720
C. 825   D. 920

Answer B

47. How many 3-letter words with or without meaning, can be formed out of the letters of the word, 'LOGARITHMS', if repetition of letters is not allowed?

A. 720   B. 420
C. None of these   D. 5040

Answer A

48. A polygon with 7 sides can be triangulated into

A. 7   B. 14
C. 5   D. 10

Answer C

49. 1, 8, 4, 27, 9, ?

A. 8   B. 9
C. 64   D. 16

Answer C

50. After striking the floor, a rubber ball rebounds to 4/5th of the height from which it has fallen. Find the total distance that it travels before coming to rest if it has been gently dropped from a height of 120 metres.

A. 540 m   B. 960 m
C. 1080 m   D. 1020 m

Answer C

MOCK TEST - 1

PHYSICS MOCK TEST   Marks: 50

51. If the reflected image formed is magnified and virtual, then the mirror system is
A. Concave
B. Convex
C. Plane
D. Convex or Plane

Answer B

52. What type of material is obtained when an intrinsic semiconductor is doped with trivalent impurity?
A. Extrinsic semiconductor
B. Insulator
C. N –type semiconductor
D. P –type semiconductor

Answer D

53. Nucleons are collection of
A. electrons and protons
B. electrons and neutrons
C. protons and neutrons
D. protons and positrons

Answer C

54. If λ_v, λ_x > λ_m represents the wavelengths of visible light, X-rays and microwaves respectively, then:
A. $\lambda_m > \lambda_x > \lambda_v$
B. $\lambda_m > \lambda_v > \lambda_x$
C. $\lambda_v > \lambda_x > \lambda_m$
D. $\lambda_v > \lambda_m > \lambda_x$

Answer B

55. The image formed by a concave lens is _____.
A. always real and enlarged
B. always real and diminished
C. always virtual and enlarged
D. always virtual and diminished

Answer A

56. The permeability and permittivity of air or free space is unity. State true/false.
A. True
B. False

Answer B

57. The force between two charges is 120 N. If the distance between the charges is doubled, the force will be
A. 60 N
B. 30 N
C. 40 N
D. 15 N

Answer B

58. If three 15 uF capacitors are connected in series, the net capacitance is
A. 5 uF
B. 30 uF
C. 45 uF
D. 50 uF

Answer A

59. Energy which is released when 1 mole of ionic crystal is formed is known as
A. lattice energy
B. heat energy
C. molar energy
D. kinetic energy

Answer A

60. For an ac series circuit, the resonant frequency is given by, $f = 1/2p L^a C^b$. The values of a and b will be.
A. 2, 2
B. 1/2, 1/2
C. −1/2, −1/2
D. −1/2, 1/2

Answer A

61. When a net force act on a body, it produces acceleration in body in direction of net force which is directly proportional to net force acting on body and inversely proportional to its mass. This statement is called.
A. newton's 2nd law of motion
B. newton's 1st law of motion
C. newton's 3rd law of motion
D. law of momentum

Answer A

62. The focal length of a lens whose power is -1.5 D is .
A. −1.5 m
B. + 1.5 m
C. + 66.66 cm
D. −66.66 cm

$P = \frac{1}{f}$ (P in cm)
$(1 \, m)$

Answer D

63. What kind of image is formed by a concave lens irrespective of the position of the object?
A. virtual, upright and diminished
B. real, upright and diminished
C. virtual, upright and magnified
D. real, inverted and magnified

Answer A

64. The current gain of a transistor in common base mode is 0.995. The current gain of the same transistor in common emitter mode is.
A. 197
B. 201
C. 198
D. 199

Answer D

65. What is the SI unit of electrical conductance?
A. Volt
B. Watt
C. Siemens
D. Ampere

Answer C

66. The n-region has a greater concentration of _____ as compared to the p-region in a P-N junction diode.
A. holes
B. electrons
C. both holes & electrons
D. phonons

Answer B

67. On a rainy day, small oily films on water show brilliant colours. This is due to.
A. scattering
B. interference
C. polarisation
D. none of these

Answer B

68. In an npn power transistor, the collector current is 20 mA. If 98% of the electrons injected in to the base region reach the collector, the base current in mA is nearly
A. 2 mA
B. 1 mA
C. 0.5 mA
D. 0.4 mA

Answer D

69. In SHM of a simple pendulum, component of weight which is directed towards mean position is.
A. mg cosθ
B. mg sinθ
C. 0
D. mg tanθ

Answer B

70. Which of these electromagnetic waves has the shortest wavelength ?
A. radio waves $(10^4 \, m)$
B. infrared waves $(8 \times 10^{-7} \, m)$
C. X rays $(10^{-11} \, m)$
D. ultraviolet waves $(10^{-8} \, m)$

Answer C

71. What is the power of the lens, if the far point of a short - sighted eye is 200 cm?
A. −0.5 D
B. 2 D
C. 1 D
D. −1.5 D

$P = \frac{1}{f(in \, m)} = \frac{1 \times 100}{200} = \frac{1}{2} \, m$

Answer A

7      $-0.5 \, m$

72. The centripetal acceleration of a particle in uniform motion is _____ to the radius of its path.

A. directly proportional
B. inversely proportional
C. equal
D. not related in any way

Answer B

73. The unit of conductivity is
A. mho/meter
B. mho/sq.m
C. ohm/meter
D. ohm/sq.m

Answer A

74. The property of a fluid which enables it to resist tensile stress is known as?
A. compressibility
B. surface tension
C. cohesion
D. adhesion

Answer C

75. Which one is a scalar quantity?
A. Acceleration
B. Speed
C. Displacement
D. Velocity

Answer B

76. Which is NOT a fundamental physical quantity of mechanics?
A. Length
B. Mass
C. Volume
D. Time

Answer C

77. The coefficient of restitution always applies.
A. to only one of the colliding objects
B. to neither of the colliding
C. to the bigger colliding object
D. jointly to the colliding objects

Answer D

78. Materials generally become warmer when light is.
A. absorbed by them.
B. reflected by them.
C. transmitted by them.
D. all of these.

Answer A

79. The earth's magnetic field at a certain place has a horizontal component 0.3 G and the total strength 0.5 G. The angle of dip is:

A. $\tan^{-1}(\frac{4}{5})$
B. $\sin^{-1}(\frac{4}{5})$
C. $\sin^{-1}(\frac{3}{5})$
D. $\tan^{-1}(\frac{3}{4})$

$\tan\theta = \frac{V}{H}$

Answer D

80. Gravitation occurs between all objects in the universe by virtue of their .
A. mass
B. density
C. weight
D. volume

Answer A

81. The capacitor doesn't allow sudden changes in.
A. Voltage
B. Current
C. Resistance
D. Capacitance

Answer A

82. IDSS can be defined as.
A. the minimum possible drain current
B. the maximum possible current with VGS held at – 4 V
C. the maximum possible current with VGS held at 0 V
D. the maximum drain current with the source shorted

Answer C

83. Which is beta's current ratio ?
A. IC / IB
B. IC / IE
C. IC / IE
D. IE / IB

Answer A

84. Why is tungsten used exclusively for the filament of an incandescent lamp ?
A. Tungsten can be drawn into thin wires which in turn offer high resistance
B. Tungsten has a fairly good resistivity
C. The melting point of tungsten is very high
D. All of these

Answer D

85. In the case of a concave mirror, the image of an object is
A. Real, erect and diminished when the object lies beyond the centre of curvature.
B. Real, inverted and of the same size as the object when it lies between the centre of curvature and focus.
C. Real, inverted and diminished when the object lies beyond the centre of curvature.
D. Not real, large and unproportional.

Answer C

86. A periscope works on the principal of
A. refraction
B. total internal reflection
C. diffraction
D. reflection

Answer B

87. What is the power of concave lens?
A. Positive
B. Negative
C. Both
D. None of the above

Answer B

88. A stone is whirled in a vertical circle at the end of a string. When the stone is at the highest position the tension in the string is.
A. maximum
B. zero
C. equal to the weight of the stone
D. less than the weight of the stone

Answer C

89. Which zone of a candle flame is the hottest?
A. Dark innermost zone
B. Outermost zone
C. Middle luminous zone
D. Central zone

Answer B

90. Dimensions of coefficient of viscosity is.
A. $[M^2L^2T^2]$
B. $[M^2LT^2]$
C. $[ML^{-1}T^{-1}]$
D. $[MLT^2]$

Answer C

91. A full adder logic circuit will have.
A. Two inputs and one output
B. Three inputs and three outputs
C. Two inputs and two outputs
D. Three inputs and two outputs

Answer D

92. In physics, a radian per second is a unit of.
A. angular displacement
B. angular velocity
C. angular acceleration
D. angular momentum

Answer B

93. A cyclist moves along a circular path of radius 70m. If he completes one round in 11s, calculate total length of path.
A. 40m
B. 440m
C. 0m
D. 11m

Answer B

94. Mass of a body (m) into acceleration (a) is equal to
A. inertia
B. displacement
C. momentum
D. force

Answer **D**

95. Ions of ionic crystals become free when it is in
A. solid state
B. compound state
C. molten state
D. none of these

Answer **C**

96. To and fro oscillatory motion in which acceleration of body is directly proportional to displacement of body from mean position and is always directed towards mean position is known as-
A. compressional motion
B. damped motion
C. simple harmonic motion
D. none of the above

Answer **C**

97. The units of capacitance are
A. volts/coulomb
B. coulombs/volt
C. ohms
D. henry/Wb

Answer **B**

98. The ability of charged bodies to exert force on one another is attributed to the existence of
A. electrons
B. protons
C. neutrons
D. electric field

Answer **D**

99. Which of the following relation will hold well?
A. $D = \mu H$
B. $B = \varepsilon E$
C. $E = \varepsilon D$
D. $B = \mu H$

Answer **D**

100. Momentum is the product of?
A. mass and time
B. velocity and mass
C. force and time
D. force and mass

Answer **B**

MOCK TEST - 1

CHEMISTRY MOCK TEST   Marks: 20

101. Air contains maximum amount of.
A. oxygen
B. nitrogen
C. hydrogen
D. carbon dioxide

Answer **B**

102. What is the chemical name of table salt ?
A. Sodium nitrate
B. Ammonium chloride
C. Sodium chloride
D. Calcium chloride
$(NaCl)$

Answer **C**

103. Permanent hardness of water is due to the presence of ?
A. Magnesium bicarbonate
B. Calcium bicarbonate
C. Sodium bicarbonate
D. Calcium sulphate

Answer **D**

104. The cyclotron is used to
A. accelerating particles
B. separating elements
C. purifying metals
D. making alloys

Answer **A**

105. Natural rubber is a polymer derived from ?
A. ethylene
B. propylene
C. isoprene
D. butadiene

Answer **C**

106. Graphite, Carbon and Diamonds are ?
A. Isotopes
B. Isomers
C. Isotones
D. Allotropes

Answer **D**

107. Which among the following acids is abundant in Grapes, Bananas and Tamarind?
A. Lactic Acid
B. Oxalic Acid
C. Salicylic Acid
D. Tartaric Acid

Answer **D**

108. What is the common name of Calcium Sulphate?
A. Bleaching powder
B. Slaked lime
C. Plaster of paris
D. Detergent

Answer **C**

109. Which of the following metals has the lowest melting point ?
A. Copper
B. Lead
C. Iron
D. Steel

Answer **D**

110. The number of electrons presents in H^+ is
A. zero
B. one
C. two
D. three

Answer **A**

111. The number of d-electrons in Fe^{2+} (Z = 26) is not equal to that of
A. p –electrons in Ne(Z = 10)
B. s –electrons in Mg(Z = 12)
C. d –electrons in Fe(Z = 26)
D. p –electrons in Cl(Z = 17)

Answer **D**

CHEMISTRY MOCK TEST - 1

112. Which of the following elements behave chemically both as a metal and a non metal?
A. Boron
B. Carbon
C. Argon
D. Mercury

Answer | **A**

113. Which one of the following is the softest?
A. sodium
B. iron
C. aluminium
D. lithium

Answer | **A**

114. For which one of the following is the density maximum?
A. Ice
B. Water
C. Benzene
D. Chloroform

Answer | **B**

115. Lysergic acid diethylamide (LSD) is a drug used as a :
A. Steroid
B. Sedative
C. Analgesic
D. Hallucinogen

Answer | **D**

116. When a piece of quicklime is dipped in water, it gives bubbles. This bubbling is due to which of the following ?
A. Oxygen
B. Carbon Dioxide
C. Water Vapour
D. Hydrogen

Answer | **C**

117. Bleaching action of chlorine is by
A. decomposition
B. hydrolysis
C. reduction
D. oxidation

Answer | **A**

118. The concept of an electrolyte in water was described by.
A. Faraday
B. Ohm
C. Debye
D. No Explanation

Answer | **D**

119. Water at 4 degree centigrade has ?
A. minimum density
B. maximum density
C. No density
D. None of the above

Answer | **D**

120. Identify the thermosetting plastic from the given options.
A. Polythene
B. Bakelite
C. PVC
D. Casseine

Answer | **B**

MOCK TEST - 1

ENGLISH MOCK TEST   Marks: 40

Passage

Economists have long recognized a persistent and unfounded belief among the population which has come to be known as the anti-foreign bias. As a result of this bias, most people systematically underestimate the economic benefits of interactions with foreign nations. Some psychologists believe that this bias is rooted in a natural distrust of the "other," while others believe that a form of folk wisdom, seemingly in accord with common sense but nonetheless incorrect, explains the bias. This wisdom asserts that in any transaction there is a winner and a loser and any foreign nation that wants to engage in trade must be doing so because it seeks its own advantage. But nothing could be further from truth.

No less an authority than Adam Smith, one of the fathers of the modern free market system, spoke glowingly of foreign trade in his influential treatise Wealth of Nations. "What is prudence in the conduct of every private family, can scarce be folly in a great kingdom," said Smith. His point is simple. A baker trades his bread to the cobbler for shoes and both men benefit from the trade because of the value of specialization. The same principle works for nations. Even more startling, a basic economic theorem, the Law of Comparative Advantage, states that mutually beneficial trade is possible even if one nation is less productive than the other.

Suppose a citizen of Country X can produce either 10 computers or five bushels of wheat and a citizen of Country Y can produce either three computers or two bushels of wheat. If one citizen from Country X switches from producing wheat to computers and three citizens from Country Y switch from producing computers to wheat, there is a net gain of one computer and one bushel of wheat.

121. The passage is primarily concerned with which of the following?
A. Arguing for an increase in trade with foreign nations.
B. Providing a historical context for a long-standing belief.
C. Demonstrating the fallacy of a particular way of thinking.
D. Illustrating an economic principle through an example.

Answer | **C**

122. The author most likely mentions the "baker" and the "cobbler" in order to:
A. provide a concrete illustration of an economic principle
B. discuss the types of goods available during Adam Smith's time
C. evaluate an example used in Smith's Wealth of Nations
D. show that all trade is based on specialization

Answer | **B**

123. The author most probably uses the word "startling" in reference to the Law of Comparative Advantage because:
A. it is puzzling that no one before Adam Smith thought of the Law
B. the Law of Comparative Advantage holds even when there is an imbalance in the capabilities of the nations
C. it is surprising that the general public is unaware of the Law of Comparative Advantage
D. most countries do not consider the Law of Comparative Advantage when devising their trade policies

Answer | **D**

124. As it is described in the passage, which of the following most closely resembles "folk wisdom?"
A. A farmer decides that it is going to rain after scanning the sky for dark clouds.
B. A child asks his parents why the sky is blue and the parents reply
C. A person spends 10 dollars on lottery tickets every week because he believes that
D. A mother tells her child to put on a jacket so he won't catch cold, even though colds are caused by viruses.

| Answer | C |

Directions to Solve : In the questions below the sentences have been given in Direct/Indirect speech. From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.

125. "If you don't keep quiet I shall shoot you", he said to her in a calm voice.
A. He warned her to shoot if she didn't keep quiet calmly.
B. He said calmly that I shall shoot you if you don't be quiet.
C. He warned her calmly that he would shoot her if she didn't keep quiet.
D. Calmly he warned her that be quiet or else he will have to shoot her.

| Answer | C |

126. I told him that he was not working hard.
A. I said to him, "You are not working hard."
B. I told to him, "You are not working hard."
C. I said, "You are not working hard."
D. I said to him, "He is not working hard."

| Answer | A |

127. His father ordered him to go to his room and study.
A. His father said, "Go to your room and study."
B. His father said to him, "Go and study in your room."
C. His father shouted, "Go right now to your study room"
D. His father said firmly, "Go and study in your room."

| Answer | A |

128. He said to his father, "Please increase my pocket-money."
A. He told his father, "Please increase the pocket-money"
B. He pleaded his father to please increase my pocket money.
C. He requested his father to increase his pocket-money.
D. He asked his father to increase his pocket-money.

| Answer | C |

129. She said that her brother was getting married.
A. She said, "Her brother is getting married."
B. She told, "Her brother is getting married."
C. She said, "My brother is getting married."
D. She said, "My brother was getting married."

| Answer | C |

Direction: Each of the following sentences is followed by four words or group of words. Fill in the blanks with the appropriate word or group of words.

130. The statue _____ a global symbol of freedom
A. stands against
B. stands to
C. stands for
D. stands as

| Answer | D |

131. Is not learning superior ____ wealth ?
A. than
B. from
C. by
D. to

| Answer | D |

132. A group of agitators ____ the mob to break down the Vice-Chancellors door.
A. wished
B. excited
C. threatened
D. incited (उकसाया)

| Answer | D |

133. Turn the lights _____ before you go to bed.
A. on
B. off
C. out
D. down

| Answer | B |

134. There is no _____ evidence to support your assertion.
A. facile (आसान)
B. fictitious (कल्पित)
C. facetious (हास्यकर)
D. factual (वास्तविक)

| Answer | D |

Direction: The given sentence is in active/ passive voice. Change the voice of the sentence. Select the correct option from the sentence below.

135. Please keep quiet.
A. You are told for keep quiet.
B. You are requested to keep quiet.
C. You are requested for keep quiet.
D. You are told to keep quiet.

| Answer | B |

136. She wants that she should be respected.
A. She wanted to respected.
B. She wants to respected.
C. She wanted to be respected.
D. She wants to be respected.

| Answer | D |

137. He found the student guilty.
A. The student was found to be guilty by him.
B. The student was found guilty by him.
C. The student was found to guilty by him.
D. The student found to be guilty by him.

| Answer | A |

138. Darjeeling grows tea.
A. Tea is grown in Darjeeling.
B. Tea grows in Darjeeling.
C. Tea is being grown in Darjeeling.
D. Let the tea be grown in Darjeeling.

| Answer | A |

139. After driving Professor Jones to the museum she dropped him at his hotel.
A. After she was driven Professor Jones to the museum she had dropped him at his hotel.
B. After she had driven Professor Jones to the museum she had dropped him at his hotel.
C. After being driven to the museum, Professor Jones was dropped at his hotel.
D. Professor Jones was being driven dropped at his hotel.

| Answer | C |

Go through all the below mentioned tables for solving the questions within seconds.

Questions:

140. Ducks : Quack :: Cow : ?
A. Moo
B. Hoot
C. Sing
D. Grunt

Answer **A**

141. Bowl : Soup :: Plate : ?
A. Spoon
B. Coffee
C. Rice
D. Dish

Answer **C**

142. 2 : 8 :: 4 : ?
A. 16
B. 64
C. 128
D. 20

Answer **B**

143. Vacant : Occupied :: Weak : ?
A. Feeble
B. Paramount
C. Sturdy
D. None of the above

Answer **C**

144. Flower : Vase :: Pencil : ?
A. Pen
B. Compass Box
C. Desk
D. All of the above

Answer **B**

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that is the opposite meaning of another. It comes from the Greek words 'anti' for opposite and 'Atonym' for name.

145. Antonym of DUCTILE is ?
A. Docile
B. Pliable (नचीला)
C. Stiff (कठोर)
D. Supple

Answer **C**

146. Antonym of Abundant?
A. Short
B. Meagre
C. Limited
D. Petty

Answer **B**

147. Which word is an antonym for absurd? (बेतुका)
A. scarcity
B. Rational
C. Florish
D. Reasonable

Answer **D**

148. Antonym of EXPAND is ?
A. Congest
B. Conclude
C. Convert
D. Condense (शाककरना)

Answer **D**

149. Antonym of ARTIFICIAL is?
A. Red
B. Solid
C. Truthful
D. Natural

Answer **D**

150. Antonym of ENORMOUS is?
A. Fragile
B. Weak
C. Tiny
D. Soft

Answer **C**

151. Antonym of RECONDITE is ? (गूढ़)
A. Hermetic वायुबंदी
B. Manifest एकट
C. Pedantic
D. Occult
(रहस्यमय)

Answer **B**

Synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language, for example shut is a synonym of close.

152. PROPITIOUS
A. Favorable
B. Clean
C. Nearby
D. Patriotic

Answer **A**

153. RECTITUDE (क्षमता)
A. Duplication
B. Integrity (अखंडता)
C. Rectification
D. Recovery

Answer **B**

154. INCONGRUOUS
A. Inconceivable
B. Inevitable
C. Inconsistent
D. Incontrovertible

Answer **C**

155. SLIPSHOD
A. Vulgar
B. Careless
C. Common place
D. Retaliatory

Answer **B**

156. MASQUERADE
A. to provide support
B. to be in disguise
C. to mesmerize
D. marathon race

Answer **B**

ENGLISH- ONE WORD SUBSTITUTION

157. Agnostic
A. One who is not sure about God's existence?
B. One who believes in God's existence?
C. One having different style of living.
D. None of above.

Answer **A**

158. Altruist
A. One who is lover of beauty.
B. One who never stops.
C. A lover of mankind.
D. A person who hates mankind.

Answer **C**

159. Amateur
A. One who is not having experience.
B. One who does a thing for pleasure and not as a profession.
C. One who have all happiness.
D. One who remains sad.

Answer **B**

160. Anarchist
A. Religious person.
B. Person against a particular religion.
C. Person who always suspects.
D. One who is out to destroy all governments, peace and order

Answer **D**

MOCK TEST - 1

APTITUDE MOCK TEST

Marks:

161. Which word does NOT belong with the others?
A. inch
B. ounce
C. centimeter
D. yard

Answer | B

162. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?
A. $\frac{1}{10}$
B. $\frac{2}{25}$
C. $\frac{2}{7}$
D. $\frac{5}{7}$

Answer | C

163. In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?
A. 120
B. 720
C. 4320
D. 2160

Answer | B

164. A car traveling with $\frac{5}{7}$ of its actual speed covers 42 km in 1 hr 40 min 48 sec. Find the actual speed of the car.
A. $17\frac{6}{7}$ km/hr
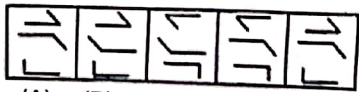B. 25 km/hr
C. 30 km/hr
D. 35 km/hr

Answer | D

165. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women?
A. 63
B. 90
C. 126
D. 45

Answer | A

166. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.
Problem Figures: Answer Figures:

(A) (B) (C) (D) (E)   (1) (2) (3) (4) (5)
A. 1
B. 2
C. 3
D. 4
E. 5

Answer | A

167. Pointing to a girl in photograph. Amar said, "Her mother's brother is the only son of my mothers' father." How the girl's mother related to Amar ?
A. Mother
B. Sister
C. Aunt
D. Grandmother

Answer | C

168. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.
Problem Figures: Answer Figures:
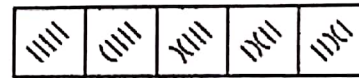
(A) (B) (C) (D) (E)   (1) (2) (3) (4) (5)
A. 1
B. 2
C. 3
D. 4
E. 5

Answer | E

169. The value of 25.25 − 23.23 + 24.24 is
A. 26
B. 26.26
C. 2.2
D. −22.22

Answer | B

170. Find value of $(a^2+2a+b^2)/(a^3-2a^2)$, if $a + (b^2/a)= 2$?
A. $4/b^2$
B. $(2a^2)/b^2$
C. $-2a^2b^2$
D. $4/(-b^2)$

Answer | B

171. Sam borrowed some money from his friend at simple interest of 6% per annum. He returned his friend Rs. 15600. After how much time did Sam return the money if he borrowed Rs. 12000?
A. 8 years
B. 2.5 years
C. 5 years
D. 3.5 years

Answer | C

172. An amount becomes 7 times in 15 years. In how many years will the same amount become 10 times? The rate of interest remains the same for both cases.
A. 20 years
B. 18.75 years
C. 22.50 years
D. 21.50 years

Answer | C

173. Two pipes M and N can fill a tank in 22.5 and 15 minutes, respectively. If both the pipes are opened simultaneously, after how much time should N be closed so that the tank is full in 18 minutes?
A. 4 minutes
B. 3 minutes
C. 4.5 minutes
D. 2.5 minutes

Answer | B

174. What will be selling price, if cost price is Rs. 120 and gain is 35%?
A. Rs. 135
B. Rs. 85
C. Rs. 155
D. Rs. 162

Answer | D

175. If Harsh sold a match ticket for Rs.340 at a profit of 25%, at what price did he purchased the ticket?
A. 280
B. 255
C. 300
D. 272

Answer | D

176. Chaman has two big cans of wine and water mixture. Chaman mixes the contents of both the cans in a big container. The new mixture has half water and half wine. In what quantity did Chaman mix contents of Can 1 and 2 if Can 2 has wine to water ratio of 2:3 & Can 1 has wine to water ratio 5:3?

A. 5:3
B. 4:5
C. 5:4
D. 2:5

Answer B

177. One glass has juice and water in the ratio 5:2 while other glass has them in ratio 7:4, respectively. If both glasses poured in a vessel, then what will be final ratio of water to juice in the vessel?

A. 8:35
B. 52:25
C. 35:8
D. 25:52

Answer D

178. The present ages of three persons are in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 76. Find their present ages (in years).

A. 8, 20, 28
B. 12, 21, 27
C. 20, 35, 45
D. None of these

Answer C

179. What is probability of drawing two clubs from a well shuffled pack of 52 cards?

A. 13/51
B. 1/17
C. 1/26
D. 13/17

Answer B

180. In Cricket League, in first round every team plays a match with every other team. 9 teams participated in the Cricket league. How many matches were played in the first round?

A. 36
B. 72
C. 9!
D. 9! −1

Answer A

181. At what time between 7 o'clock and 8 o'clock, will the hands of a clock be together?

A. 33(5/12) minutes past 7 o'clock
B. 38(2/11) minutes past 7 o'clock
C. 35(7/11) minutes past 8 o'clock
D. 32(1/11) minutes before 8 o'clock

Answer B

Types
- Single Words
- Pair of Words

Both types can be further divided into:
- Letters
- Numbers
- Words

182. Single Words
Letters: Example
i) Pick the odd one out

A. B
B. D
C. E
D. F

Answer C

Explanation: E is a vowel. Rest all are consonants.

Numbers: Example
183. Pick the odd one out

A. 4
B. 16
C. 36
D. 8

Answer D

Explanation: $2^2 = 4$, $4^2 = 16$, $6^2 = 36$.

Words: Example
184. Pick the odd one out

A. Volleyball
B. Football
C. Baseball
D. Chess

Answer D

Explanation: Volleyball, Football and Cricket–all are outdoor games and Chess is an indoor game.

185. Pointing out to a lady, a girl said, "She is the daughter-in-law of the grandmother of my father's only son." How is the lady related to the girl?

A. Sister-in-Law
B. Mother
C. Aunt
D. Can't be determined

Answer D

186. Arrange the following words as per the English dictionary & find the last word.

A. Lean
B. Leave
C. Less
D. Leaf

Answer C

187. At what time between 5.30 and 6 will the hands of a clock be at right angles?

A. $43\frac{5}{11}$ min. past 5
B. $43\frac{7}{11}$ min. past 5
C. $40\frac{3}{11}$ min. past 5
D. $45\frac{9}{11}$ min. past 5

Answer B

188. Robert is travelling on his cycle and has calculated to reach point A at 2 P.M. if he travels at 10 kmph, he will reach there at 12 noon if he travels at 15 kmph. At what speed must he travel to reach A at 1 P.M.?

A. 8 kmph
B. 11 kmph
C. 12 kmph
D. 14 kmph

Answer C

189. Pride is to lion as shoal is to

A. teacher
B. student
C. self-respect
D. fish

Answer D

190. Arrange the following words as per order in the dictionary.
1. Launch 2. Laugh 3. Lattice 4. Latent 5. Latitude

A. 4,5,3,2,1
B. 4,3,5,1,2
C. 4,5,1,2,3
D. 4,5,1,3,2

Answer A

191. Find odd one out. 10, 25, 45, 54, 60, 75, 80.

A. 10
B. 45
C. 54
D. 75

Answer C

192. The ratio 5:20 expressed as percent equals to

A. 50 %
B. 125 %
C. 25 %
D. None of above

Answer C

193. If COOL is coded as DQRP, then write the code for HOT.

A. JQW
B. IQW
C. IQX
D. IPW

Answer B

194. 5, 9, 17, 29, 45, ... ?

A. 58
B. 64
C. 65
D. 80

Answer C

195. How many liters of pure acid are there in 8 litres of a 20% solution
A. 1.5
B. 1.6
C. 1.7
D. 1.8

Answer B

196. Choose the word which is different from the rest.
A. Hangar
B Platform
C. Dock
D. Park

Answer D

197. A*B implies A^2+B^2. What is the value of 6*(2*4)?
A. 999
B. 3616
C. 324
D. 436

Answer D

198. Evaluate : $\dfrac{\sqrt{0.01} + \sqrt{0.0064}}{0.01 \times 0.3}$
A. 1
B. 10
C. 100
D. 1000

Answer C

199. Find the least number of 5 digits, which is exactly divisible by 89.
A. 24
B. 26
C. 27
D. 28

Answer C

200. Which one of the 5 choices makes the best comparison?
PEACH is to HCAEP as 46251 is to.
A. 25641
B. 26451
C. 15624
D. 51462

Answer C

MOCK TEST - 2

MATHS MOCK TEST   Marks: 5

1. x, 17, $3x - y^2 - 2$ and $3x + y^2 - 30$ are four consecutive terms of an increasing arithmetic sequence. The sum of the four numbers is divisible by:
A. 2
B. 3
C. 5
D. 7

Answer A

2. Two trains, each 100 m long, moving in opposite directions, cross each other in 8 seconds. If one is moving twice as fast the other, then the speed of the faster train is.
A. 30 km/hr
B. 45 km/hr
C. 60 km/hr
D. 75 km/hr

Answer C

3. If roots of $p^2 + qx + 1 = 0$ are equal, then.
A. $q^2 - 4p = 0$
B. $q^2 + 4p = 0$
C. $p^2 - 4p = 0$
D. $p^2 + 4q = 0$

Answer A

4. A fruit seller sells mangoes at the rate of Rs.9 per kg and thereby loses 20%. At what price per kg, he should have sold them to make a profit of 5%.
A. Rs 8.81
B. Rs 9.81
C. Rs 10.81
D. Rs 11.81

Answer D

5. Types of decimal representation of rational numbers are,
A. 3
B. 5
C. 2
D. 4

Answer C

6. The value of p for equation $2x^2 - 4x + p = 0$ to have real roots will be
A. $p \leqslant -2$
B. $p \geqslant 2$
C. $p \leqslant 2$
D. $p \geqslant -2$

Answer C

7. If a:b = 2:3 and b:c = 4:3, then find a:b:c
A. 8:12:9
B. 2:3:8
C. 2:3:9
D. 2:3:12

Answer A

8. In how many ways can 10 examination papers be arranged so that the best and the worst papers never come together?
A. 8*8!
B. 8*9!
C. 7*9!
D. 9*8!

Answer B

9. If x + 2 is a factor of $x^3 - 2ax^2 + 16$, then value of a is
A. 3
B. 1
C. 4
D. 2

Answer B

10. If a < 0, then function $f(x) = a x^2 + bx + c$ has
A. maximum value
B. minimum value
C. constant value
D. positive value

Answer A

11. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done.
A. 456
B. 556
C. 656
D. 756

Answer D

12. Let f and g be the function from the set of integers to itself, defined by $f(x) = 2x + 1$ & $g(x) = 3x + 4$. Then the composition of f and g is .
A. 6x + 9
B. 6x + 7
C. 6x + 6
D. 6x + 8

Answer A

13. Which of the following function f: Z X Z → Z is not onto?
A. f(a, b) = a + b
B. f(a, b) = a
C. f(a, b) = |b|
D. f(a, b) = a − b

Answer C

14. In a college, the ratio of the number of boys to girls is 8 : 5. If there are 200 girls, the total number of students in the college is.
A. 420
B. 520
C. 620
D. 720

Answer B

15. Ratio of ages of three persons is 4:7:9, Eight years ago, the sum of their ages was 56. Find their present ages.
A. 16,35,36
B. 12,28,36
C. 16,28,27
D. 16,28,36

Answer D

16. Which number has just 3 prime factors of 2, 3 and 7?
A. 18
B. 24
C. 52
D. 42

Answer D

17. $\dfrac{(n-3)!}{(n-5)!} = ?$
A. (n −3)!
B. (n −5)!
C. (n-3)(n-4)
D. (n-3)(n-4)(n-5)

Answer C

18. The logical form of $(A \cup B)' = A' \cap B'$ is ?
A. $\sim(pVq) = \sim p^\wedge \sim q$
B. $\sim(p \wedge q) = \sim p \vee \sim q$
C. $\sim p^\wedge \sim q = \sim (p \vee q)$
D. $\sim p \vee \sim q = \sim (p \wedge q)$

Answer A

19. The mean of the numbers a, b, 8, 5, 10 is 6 and the variance is 6.80 . Then which one of the following gives possible values a and b?
A. a = 1, b = 6
B. a = 3, b = 4
C. a = 0, b = 7
D. a = 5, b = 2

Answer B

20. Undesirable consequences which causes estimated population variance to appear less as compared to real results are classified as.
A. undesired error
B. bias
C. non-calculate error
D. non −zero error

Answer B

21. A system of notation that uses the base 2 instead of base 10 is called:
A. Binary system
B. Ternary system
C. Hex system
D. Hexagonal system

Answer B

22. Volumes of two cubes are in the ratio 8 : 27. Ratio of their surface area is.
A. 2 : 3
B. 3 : 2
C. 4 : 9
D. 9 : 4

Answer C

23. Ram has Rs. 6 more than Mohan and Rs. 9 more than Sohan. All the three have Rs. 33 in all. Ram has a share of.
A. Rs. 10
B. Rs. 16
C. Rs. 7
D. Rs. 13

Answer B

24. If the cost price of 50 oranges is equal to the selling price of 40 oranges, then the profit percent is.
A. 5
B. 10
C. 20
D. 25

Answer D

25. Find compound interest on Rs. 7500 at 4% per annum for 2 years, compounded annually
A. Rs 312
B. Rs 412
C. Rs 512
D. Rs 612

Answer D

26. The value of e = 2.71828... is also known as.
A. Archimedes Number
B. Fermat Number
C. Euler's Number
D. Avagadro Number

Answer C

27. On a sum of money, simple interest for 2 years is Rs 660 and compound interest is Rs 696.30, the rate of interest being the same in both cases.
A. 8%
B. 9%
C. 10%
D. 11%

Answer D

28 . Let A = {x: x is a digit in the number 3591}, B = {x: x ∈ N, x<10}. Which of the following is false?
A. A∩B = {1,3,5,9}
B. A −B = {2,4,6,7,8}
C. A U B = {1,2,3,4,5,6,7,8,9}
D. none of these

Answer B

29. Let A be a nilpotent matrix of order n then
A. $A^n = O$
B. nA = O
C. A = nI, I is Identity matrix
D. None of the mentioned
Explanation: n is the smallest possible number such that An = O.

Answer A

30. If sin a, sin b and cos a are in GP, then roots of $x^2 + 2x\cot\beta + 1 = 0$ are always
A. equal
B. real
C. imaginary
D. greater than 1

Answer B

31. In how many different ways can the letters of the word 'MATHEMATICS' be arranged such that the vowels must always come together?
A. 9800
B. 100020
C. 120960
D. 140020

Answer C

32. Simplify 15ax²/ 5x
A. 3ax²
B. 3ax
C. 5ax²
D. 5ax

Answer B

33. Simplify 5/2 ÷ 1/x
A. 5x / 2
B. 5 / 2x
C. 2 / 5x
D. 2x / 5

Answer A

34. If, $\vec{r} = \sin^2\theta\,\vec{a} + \cos^2\theta\,\vec{b}$ where θ is a parameter, then the points whose position vectors are $\vec{a}, \vec{b}, \vec{r}$ are collinear for

A. all value of $\theta = \frac{\pi}{2}$

B. $0 \leqslant \theta < \frac{\pi}{2}$

C. $0 \leqslant \theta \leqslant \pi$

D. None of these

Answer A

35. The degree and order of differential equation of family of parabolas whose length of latus rectum is fixed and axis is x-axis, are respectively

A. (2,3)

B. (1,2)

C. (2,1)

D. (3,2)

Answer B

36. In triangle ABC, if angle A = 89°, b = 13.5 cm and a = 17 cm then angle B is

A. 68°

B. 62°

C. 58°

D. 52.6°

Answer D

37. Two dice are tossed simultaneously. Find the probability that the total is a prime number.

A. $\frac{7}{9}$

B. $\frac{5}{12}$

C. $\frac{1}{6}$

D. $\frac{5}{9}$

Answer D

38. If volume of parallelepiped farmed by vectors $\vec{a}, \vec{b}$ and $\vec{c}$ is 2. Then the volume of parallelepiped determined by vectors $2(\vec{a}\times\vec{b})$, $3(\vec{b}\times\vec{c})$ and $(\vec{c}\times\vec{a})$ is

A. 42

B. 30

C. 24

D. 60

Answer C

39. Expand and simplify (x - 5)(x + 4)

A. $x^2 + 9x - 20$

B. $x^2 - x - 9$

C. $x^2 - x - 1$

D. $x^2 - x - 20$

Answer D

40. How many terms are there in the GP 5, 20, 80, 320........... 20480?

A. 5

B. 6

C. 8

D. 7

Answer D

41. Every simple polynomial has an interior diagonal.

A. True

B. False

Answer A

42. Suppose that P(n) is a propositional function. Determine for which positive integers n the statement P(n) must be true if: P(1) is true; for all positive integers n, if P(n) is true then P(n+2) is true.

A. P(3)

B. P(2)

C. P(4)

D. P(6)

Answer A

43. Suppose that P(n) is a propositional function. Determine for which positive integers n the statement P(n) must be true if: P(1) and P(2) is true; for all positive integers n, if P(n) and P(n+1) is true then P(n+2) is true.

A. P(1)

B. P(2)

C. P(4)

D. P(n)

Answer D

44. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there in the committee. In how many ways can it be done?

A. 624

B. 702

C. 756

D. 812

Answer C

45. If the roots of the equation $(a^2 + b^2)\,x^2 + 2x\,(ac + bd) + c^2 + d^2 = 0$, are real, then these are equal. This statement is (a, b, c, d   R)

A. true

B. false

C. can't say

D. none of these

Answer A

46. If determinant of a matrix is equal to zero, then it is said to be

A. square matrix

B. singular matrix

C. non-singular matrix

D. identical matrix

Answer B

47. We can add two matrices having real numbers A and B if their

A. order is same

B. rows are same

C. columns are same

D. elements are same

Answer A

48. Two finite sets have m and n elements. The total number of subsets of the first set is 56 more than the total number of subsets of the second set. The values of m and n are respectively.

A. 4,1

B. 6, 3

C. 8, 5

D. none of these

Answer B

49. A shopkeeper cheats to the extent of 10% while buying and selling, by using false weights. His total gain is.

A. 20%

B. 21%

C. 22%

D. 23%

Answer B

50. In how many ways can the letters of the word "CORPORATION" be arranged so that vowels always come together.

A. 5760

B. 50400

C. 2880

D. None of above

Answer B

MOCK TEST - 2

PHYSICS MOCK TEST   Marks: 50

51. Scalars are quantities that are described by?
A. Magnitude
B. Direction
C. Magnitude & Direction
D. Motion

Answer A

52. When the vector sum of the external forces acting on the system of particles equals zero, the total linear momentum of the system.
A. becomes zero
B. maximizes
C. changes abruptly
D. remains constant

Answer D

53. An ideal flow of any fluid must fulfill the following.
A. Newton's law of motion
B. Newton's law of viscosity
C. Pascal' law
D. Continuity equation

Answer D

54. One horsepower is equivalent to how many watts ?
A. 550
B. 746
C. 33,000
D. 250

Answer B

55. What is defined as the time rate at which work is done ?
A. impulse
B. Momentum
C. Power
D. Energy

Answer C

56. Momentum is the product of.
A. mass and time
B. velocity and mass
C. force and time
D. force and mass

Answer B

57. What is the unit of relative intensity ?
A. Pa
B. N-m
C. N-m/s
D. Unit less

Answer D

58. The color of an object is the same as the light that is
A. transmitted.
B. absorbed.
C. reflected.
D. all of these.

Answer C

59. What will happen to the capacitor when the source is removed?
A. It will not remain in its charged state
B. It will remain in its charged state
C. It will start discharging
D. It will become zero

Answer B

60. A resistor of 1 kilo watt with a resistance of 1 kilo ohm can have maximum current of
A. 30 mA
B. 100 mA
C. 150 mA
D. 500 mA

Answer A

61. Ohm's law is not applicable in all the following cases except
A. Electrolysis
B. Arc lamps
C. Insulators
D. Vacuum radio valves

Answer C

PHYSICS MOCK TEST - 2

62. The following switching functions are to be implemented using a decoder.
$f1 = \sum m(1, 2, 4, 8, 10, 14)$ $f2 = \sum m(2, 5, 9, 11)$
$f3 = \sum m(2, 4, 5, 6, 7)$
The minimum configuration of decoder will be
A. 2 to 4 line
B. 3 to 8 line
C. 4 to 16 line
D. 5 to 32 line

Answer C

63. In a laser (say neon laser) all the atoms emit the light waves of.
A. same frequency
B. same amplitude
C. same phase
D. All of the above

Answer D

64. Number of vibrations of a body in one sec is called.
A. frequency
B. amplitude
C. time period
D. vibration

Answer A

65. A virtual image is formed by.
A. a slide projector in a cinema hall
B. the ordinary camera
C. a simple microscope
D. telescope

Answer C

66. By the surface, the solid angle subtended at the centre of a sphere, whose area is equal to the surface of the radius of the sphere is known as
A. Radian
B. Steradian
C. Candela
D. Lux

Answer B

67. For motion in two or three dimensions, what is the angle between velocity and acceleration vectors?
A. $0°$
B. $180°$
C. Between $0°$ and $180°$
D. $90°$

Answer C

68. The human eye is like a camera and hence it contains a system of lens. The eye lens forms.
A. a straight or upright, real image of the object on the retina
B. an inverted, virtual image of the object on the retina
C. an inverted, real image of the object on the retina
D. a straight or upright, real image of the object on the iris

Answer C

69. Motion of the tip of second hand of the clock is an example for
A. Uniform circular motion
B. Projectile motion
C. Motion in a plane with uniform velocity
D. Motion in a plane with constant acceleration

Answer A

70. For a body moving in a circular path, the work done by the centripetal force is
A. Negative
B. Positive
C. Constant
D. Zero

Answer D

71. Sulphur dioxide has molar heat of vaporization whose value in kJ/mole is
A. 40.6kJ/mole
B. 15.6kJ/mole
C. 24.3kJ/mole
D. 21kJ/mole

Answer C

72. Heat waves
A. can not pass through vacuum.
B. travel in straight line.
C. can be reflected by a mirror.
D. both (b) and (c)

Answer D

73. For making a capacitor, it is better to select a dielectric having
A. low permittivity
B. permittivity slightly more than that of air
C. permittivity same as that of air
D. high permittivity

Answer D

74. The direction of electric field due +Q positive charge is .
A. away from the charge
B. towards the charge
C. both (a) and (b)
D. none of the above

Answer A

75. Which of the following statements is incorrect ?
A. The leakage resistance of ceramic capacitors is generally high
B. The stored energy in a capacitor decreases with reduction in value of capacitance
C. The stored energy in a capacitor increases with applied voltage
D. A wire cable has distributed capacitance between the conductors

Answer B

76. A capacitor consists of
A. two insulators separated by a conductor
B. two conductors separated by an insulator
C. two insulators only
D. two conductors only

Answer B

77. Which of the following capacitors has relatively shorter shelf life ?
A. Mica capacitor
B. Electrolytic capacitor
C. Ceramic capacitor
D. Paper capacitor

Answer B

78. Consider the assertions given below. Which of them represent/s the precise condition/s of Ampere's circuital law for the evaluation of magnetic field intensity?
1. If H is tangential to the path, then its value must be different at all the points
2. At each point on closed path, H is either tangential or normal to the path
A. 1 is true and 2 is false
B. 1 is false and 2 is true
C. Both 1 & 2 are true
D. Both 1 & 2 are false

Answer A

79. An E.M.F. can be induced by.
A. Change in magnetic field
B. Change in the area of cross section
C. Change in angle between magnetic field and area
D. Change in magnetic field, area and angle

Answer D

80. What is emf?
A. Force
B. Voltage
C. Current
D. Flux

Answer B

81. The speed of light is_____ in vacuum.
A. 3×10^5 m/s
B. 3×10^7 m/s
C. 3×10^4 km/s
D. 3×10^5 m/s

Answer B

82. The incident ray parallel to the principal axis of a mirror_____ after reflection.
A. passes through C
B. passes through F
C. passes through the pole
D. reverts back in the opposite direction

Answer B

83. Magnification for convex mirror is _____.
A. always positive
B. always negative
C. sometimes positive
D. 1

Answer A

84. A free electron is placed in the path of a plane electromagnetic wave. The electron will start moving:
A. along the electric field
B. along the magnetic field
C. along the direction of propagation of the wave
D. in a plane containing the magnetic field and the direction of propagation

Answer A

85. In photoelectric effect, electrons should be removed from the
A. inner shells
B. surface
C. from core
D. the nucleus

Answer B

86. Times a proton is heavier than an electron is
A. 1827
B. 1876
C. 1836
D. 1789

Answer C

87. Compound semiconductors are also known as direct bad gap semiconductors. True or false?
A. True
B. False

Answer A

88. The capacitance of a reverse biased PN junction
A. Increases as reverse bias is increased
B. Decreases as reverse bias is increased
C. Increases as reverse bias is decreased
D. Is insignificantly low

Answer C

89. If a glass tube of 10 mm diameter is immersed in water, what will be the rise or fall in capillary?
(Take surface tension = 0.075 N/m, g = 10 m/s^2 and angle of contact = 0)
A. 0.75
B. 1.5
C. 3
D. 6

Answer C

90. Beats are produced by two waves $y_1 = a \sin 2000\pi t$ and $y_2 = a \sin 2008\pi t$. The number of beats heard per second is.
A. zero
B. one
C. four
D. eight

Answer C

91. According to Newton's second law of motion acceleration of an object is dependent upon two variables. Which are those two variables?
A. The net force acting upon the object and the mass of the object
B. The total force acting upon the object and the mass of the object
C. The net force acting upon the object and the velocity of the object
D. None of the above

Answer A

92. Efficiency of a machine is the ratio of ?
A. power output to power input
B. power input to power output
C. total work done to total energy
D. total energy to total power

Answer A

93. The _____ of a particle is equal to the total work that particle can do in the process of being brought to rest.
A. kinetic energy
B. potential energy
C. total energy
D. mechanical energy

Answer A

94. What is Polarization ?
A. Process of separating same charges within an object
B. Process of removing excess charge on an object
C. Process of separating opposite charges within an object
D. None

Answer C

95. Light waves traveling through the vacuum of space have a speed that's equal to
A. 3.0×10 to power of (3) m/s.
B. 5×10 to power of (6) m/s.
C. 3.0×10 to power of (8) m/s.
D. 9.0×10 to power of (9) m/s.

Answer C

96. What is a vector with a magnitude of one and with no unit ?
A. Single vector
B. Unit vector
C. Dot vector
D. Scalar vector

Answer B

97. Adding of two vectors to get a single vector is termed as.
A. Final vector
B. Resultant vector
C. Dominant vector
D. Recessive vector

Answer B

98. A ball is thrown vertically upwards with a velocity of $25\,ms^{-1}$ from the top of a tower of height 30 m. How long will it travel before it hits the ground? ($g = 10\,m/s^2$)
A. 6 sec
B. 5 sec
C. 4 sec
D. 12 sec

Answer A

99. What is another term for a scalar product of two vectors ?
A. Cross product
B. Vector product
C. Dot product
D. Plus product

Answer C

100. What refers to the time needed by an object in uniform circular motion to complete an orbit?
A. path time
B. orbit time
C. revolution
D. period

Answer D

MOCK TEST - 2

CHEMISTRY MOCK TEST   Marks: 20

101. Identify the wrong statement in the following.
A. Atomic radius of the elements increases as one moves down the first group of the periodic table
B. Atomic radius of the elements decreases as one moves across from left to right in the 2nd period of the
C. Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius
D. Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius

Answer C

102. All noble gases are ?
A. colourless
B. colourless
C. colourless and odourless
D. colourless and but have odour

Answer C

103. Contact lenses are made from?
A. Polyvinyl chloride
B. Teflon
C. Polystyrene
D. Lucite

Answer A

104. The values of Van't Hoff factors for KCl, NaCl and K_2SO_4, respectively, are___.
A. 2, 2 and 2
B. 2, 2 and 3
C. 1, 1 and 2
D. 1, 1 and 1

Answer B

105. Which of the following gas is used in cigarette lighters?
A. Butane
B. Propane
C. Methane
D. Ethane

Answer A

106. Ozone is:
A. Non-magnetic
B. Paramagnetic
C. Ferromagnetic
D. Diamagnetic

Answer D

107. The conversion of oxygen to ozone takes place because of
A. The absorption of energy
B. The release of energy
C. The solar energy
D. The atmospheric pollution

Answer A

108. What is the hardest form of carbon ?
A. coke
B. graphite
C. charcoal
D. diamond

Answer D

109. Enzymes are
A. Fatty acids
B. Carbohydrates
C. Nucleic acids
D. Proteins

Answer D

110. Aspirin is.
A. acetyl salicylic acid
B. sodium salicylate
C. methyl salicylate
D. ethyl salicylate

Answer A

126. The word 'drastic' in the passage means :
A. orderly.
B. powerful,
C. consistent.
D. determined.

Answer B

127. The author talks about 'Unspoilt Nature'. In what way can Nature remain unspoilt?
A. If Nature is not allowed to interfere with people's day-to-day life.
B. By building cities with the system of organs like those of animals.
C. By allowing free access to parks and open spaces.
D. By allowing Nature to retain its primitive, undomesticated character.

Answer B

128. According to the author, the function of a city is to :
A. provide adequate community expression.
B. make available centres of recreation and public gatherings.
C. facilitate traffic and communication.
D. raise the tone of life and make it more meaningful.

Answer D

129. The opening sentence of the passage implies that :
A. the possibilities of living a decent life cannot be found in a city.
B. only a city can provide the means to lead a full life.
C. among other places, a city can also help man to lead a successful life.
D. a city provides better opportunities for good living than a village.

Answer B

Select the word which is the exact **OPPOSITE** of the given words. **An antonym** is a word that is the opposite meaning of another. It comes from the Greek words 'anti' for opposite and 'Antonym' for name.

130. Antonym of LACERATION?
A. convalescence
B. recuperation
C. healing
D. palpitation

Answer B

131. Antonym of DENIGRATE?
A. belittle
B. believe
C. doubt
D. praise

Answer C

132. Antonym of INQUISITIVE?
A. inadequate
B. immature
C. uncomfortable
D. unconcerned

Answer D

133. Antonym of SOBRIETY?
A. moderation
B. drunkenness
C. dizziness
D. stupidity

Answer D

134. Antonym of NADIR?
A. modernity
B. zenith
C. liberty
D. progress

Answer B

135. Antonym of TIMOROUS?
A. trembling
B. cowardly
C. bright
D. bold

Answer D

136. In the interest of one's own reputation one should avoid ostentation while entertaining friends.
A. miserliness
B. simplicity
C. purity
D. innocence

Answer A

137. She used to disparage her neighbor every now and then.
A. please
B. praise
C. belittle
D. denigrate

Answer B

138. The story told by the teacher amused children in the class.
A. frightened
B. jolted
C. astonished
D. saddened

Answer D

139. Nothing has been organised properly and confusion seems inevitable.
A. inevident
B. inefficient
C. ineligible
D. uncertain

Answer A

Synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language, for example shut is a synonym of close.

140. Synonym of ASSASSIN
A. Victim
B. Slayer
C. Record
D. Heroic

Answer B

141. Synonym of BAFFLE
A. Regard
B. Scorn
C. Perplex
D. Confound

Answer C

142. Synonym of CAJOLE
A. Like
B. Warn
C. Tempt
D. Assure

Answer C

143. PROBITY
A. Courtesy
B. Promptness
C. Efficiency
D. Uprightness

Answer D

144. GARISH
A. Beautifully decorated
B. Boldly arranged
C. Unpleasantly gaudy
D. Carefully prepared

Answer C

145. FLUTTER
A. Soar
B. Agitate
C. Change
D. Float

Answer D

146. DECREPITUDE
A. Disease
B. Coolness
C. Crowd
D. Feebleness

Answer B

147. Synonym of ARROGANT
A. Conceited
B. Humble
C. Progressive
D. Noble

Answer A

ENGLISH- ONE WORD SUBSTITUTION

148. Samaritan
A. One who is very hatred.
B. One who helps needy.
C. One who never help.
D. One who is very greedy.

Answer B

149. A place for ammunition and weapons
A. Arsenal
B. Amputate
C. Altruist
D. Autobiography

Answer A

150. Somnambulist
A. someone who walks in sleep.
B. someone who runs faster.
C. someone who eats very much.
D. someone who is very greedy.

Answer A

151. Cosmopolitan
A. a person who can speak all languages.
B. a person who regards the whole world as his country.
C. a person who is having knowledge of all topics.
D. None of above.

Answer B

152. Convalescent
A. One who is always obeyed.
B. One who gets whatever he desires.
C. One who have lost his loved one.
D. Recovering from an illness or operation.

Answer A

153. The study of Birds
A. Ornithology
B. Ichthyology
C. Zology
D. Oology

Answer D

Directions: Pick out the most effective word from the given words to II in the blanks to make the sentence meaningfully complete.

154. He lost confidence and ____ of the deal at the last minute.
A backed out
B backed on
C backed down
D backed onto Practice Exercise

Answer A

155. The prisoner showed no _____ for his crimes.
A hatred
B obstinacy
C remorse
D anger

Answer C

156. The new principal _____ a system of evaluation of the students throughout the session.
A. Was introduced
B. Has introduce
C. Will introduce
D. Will introduced

Answer C

157. We _____ not hurry, we have got plenty of time.
A. need
B. should
C. would
D. must

Answer A

158. She is _____ girls I know.
A. One of the best
B. From the best
C. The most best
D. The best

Answer C

159. Students are not prepared _____ that kind of question.
A. to
B. with
C. for
D. on

Answer C

160. _____ villages in the country have concrete roads and so the transportation is quite tedious.
A. A few
B. Few
C. The few
D. Little

Answer B

MOCK TEST - 2

APTITUDE MOCK TEST   Marks: 4

161. Find the best option JAK, KBL, LCM, MDN, _____
A. OEP   B. NEO
C. MEN   D. PFQ

Answer   B

162. From a pack of 52 cards, two cards are drawn together at random. What is the probability of both the cards being kings?
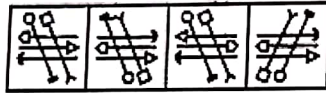
A. $\frac{1}{15}$ B. $\frac{25}{57}$

C. $\frac{35}{256}$ D. $\frac{25}{57}$

Answer   D

163. Find out how will the key figure (X) look like after rotation.

(X)   (1)   (2)   (3)   (4)

A. 1   B. 2
C. 3   D. 4

Answer   C

164. Guide is to direct as reduce is to
A. decrease   B. maintain
C. increase   D. preserve

Answer   A

165. At what time between 7 and 8 o'clock will the hands of a clock be in the same straight line but, not together?

A. 5 min. past 7   B. $5\frac{2}{11}$ min. past 7

C. $5\frac{3}{11}$ min. past 7   D. $5\frac{5}{11}$ min. past 7

Answer   D

166. Secretly is to openly as silently is to
A. scarcely   B. impolitely
C. noisily   D. quietly

Answer   C

167. An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in 1 hours, it must travel at a speed of.
A. 300 kmph   B. 360 kmph
C. 600 kmph   D. 720 kmph

Answer   D

168. Find odd one out. 10, 14, 16, 18, 21, 24, 26.
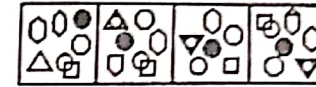A. 26   B. 24
C. 21   D. 18

Answer   C

APTITUDE MOCK TEST - 2

169. Select the alternative in which the specified components of the key figure (X) are found.

(X)   (1)   (2)   (3)   (4)

A.   1   B.   2
C.   3   D.   4

Answer   B

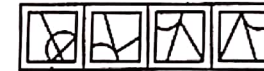170. Three unbiased coins are tossed. What is the probability of getting at most two heads?

A. $\frac{3}{4}$ B. $\frac{1}{4}$

C. $\frac{3}{8}$ D. $\frac{7}{8}$

Answer   D

171. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

(X)   (1)   (2)   (3)   (4)

A. 1   B. 2
C. 3   D. 4

Answer   B

172. Arrange the following words as per order in the dictionary.
1. Weather   2. Weasand
3. Wealth   4. Weapon
A. 3, 2, 4, 1, 5   B. 3, 2, 1, 4, 5
C. 3, 4, 2, 1, 5   D. 3, 4, 1, 2, 5

Answer   C

173. Arrange the following words as per order in the dictionary.
1. Convince   2. Converge
3. Convenience   4. Convalesce
5. Converse
A. 4, 3, 2, 5, 1   B. 1, 4, 3, 2, 5
C. 4, 2, 5, 3, 1   D. 4, 3, 2, 1, 5

Answer   A

174. 6897 is divisible by
A. 11 only   B. 19 only
C. both 11 and 19   D. neither 11 nor 19

Answer   C

175. Air is to atmosphere as water is to.
A. biosphere   B. stratosphere
C. ecosphere   D. hydrosphere

Answer   D

176. A man cycles at the rate of 15.6 kmph. How many metres does he cover in 2 minute.

A. 31.2 m
B. 260 m
C. 520 m
D. 5200 m

Answer C

177. Surendra introduces "Raju as the son of the only brother of his father's wife". How is Raju related to Surendra?

A. Cousin
B. Son
C. Uncle
D. Brother

Answer A

178. A is twice as good as workman as B and together they finish a piece of work in 18 days. In how many days will B alone finish the work.

A. 27 days
B. 54 days
C. 56 days
D. 68 days

Answer B

179. A train covers a distance in 50 minutes, if it runs at a speed of 48kmph on an average. Find the speed at which the train must run to reduce the time of journey to 40 minutes.

A. 50 km/hr
B. 60 km/hr
C. 65 km/hr
D. 70 km/hr

Answer B

180. In an election between two candidates, 75 % of the voters cast their votes, out of which 2% of the votes were declared invalid. A candidate got 9261 votes which were 75% of the total valid votes. Find the total number of votes.

A. 16800
B. 15800
C. 16700
D. 15700

Answer A

181. 4 men and 6 women finish a job in 8 days, while 3 men and 7 women finish it in 10 days. In how many days will 10 women working together finish it ?

A. 30 days
B. 40 days
C. 50 days
D. 60 days

Answer B

182. If 16 toys cost 240, then what do 40 toys cost?

A. Rs. 600
B. Rs. 620
C. Rs. 640
D. Rs. 660

Answer A

183. The value of $\frac{1}{1+\sqrt{2}}+\frac{1}{\sqrt{2}+\sqrt{3}}+\frac{1}{\sqrt{3}+\sqrt{4}}+\cdots+\frac{1}{\sqrt{15}+\sqrt{16}}$

A. 0
B. 3
C. -3
D. 1

Answer B

184. If $1^2+2^2+3^2+\ldots+10^2=385$, then $3^2+6^2+9^2+\ldots+30^2$ is equal to

A. 3465
B. 2310
C. 1155
D. 770

Answer A

185. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25% then determine the value of x.

A. 14
B. 15
C. 16
D. 17

Answer C

186. ¾ part of tank is full of water. When 30 litres of water is taken out it becomes empty. The capacity of the tank is?

A. 36 litres
B. 42 litres
C. 40 litres
D. 38 litres

Answer C

187. A TV can be bought for Rs. 20000 cash or by paying in four equal monthly installments with an initial down payment of Rs. 4000. If the rate of interest for this facility is 8% per annum, then what would be the installment charged for each month?

A. Rs. 4000
B. Rs. 4106.67
C. Rs. 4050.33
D. Rs. 4066.01

Answer D

188. The sum of four consecutive integers is 1290. The greatest of them is?

A. 321
B. 322
C. 323
D. 324

Answer D

189. Kabir paid Rs. 9600 as interest on a loan he took 5 years ago at 16% rate of simple interest. What was the amount he took as loan?

A. Rs. 16400
B. Rs. 12000
C. Rs. 12500
D. Rs. 18000

Answer B

190. If simple interest for 2 years for a sum is Rs. 600 and compound interest for the same sum for 2 years and same rate of interest is Rs. 645, what will be the rate of interest?

A. 10%
B. 15%
C. 30%
D. 5%

Answer B

191. Two pipes M and N are opened together to fill a tank. Both the pipes fill the tank in time X minutes. When M alone is filling the tank, it takes 9 minutes more time than X to fill the tank. In a similar manner N takes 16 minutes more time than X to fill the tank. What is the value of X?

A. 12 minutes
B. 7 minutes
C. 25 minutes
D. 144 minutes

Answer A

192. A leak at the bottom of the tank can empty the tank in 5 hours, while an inlet pipe can fill the same tank at the rate of 6 litres per minute. When the tank is full, the inlet is opened & the tank gets empty in 8 hours due to the leakage. Find the capacity of the tank.

A. 1800 litres
B. 3600 litres
C. 4800 litres
D. 5760 litres

Answer C

193. An article costs Rs. 600. What should be the marked price of an article so that after 10% discount, the trader makes 20% profit?

A. Rs. 800
B. Rs. 950
C. Rs. 1100
D. Rs. 1040

Answer A

194. Anil purchased 30 kg of wheat at the rate of Rs. 22 per kg and 20 kg of wheat at the rate of Rs. 24 per kg. He mixed the two. Approximately at what rate per kg should he sell the mixture to make 25% profit?

A. Rs. 25
B. Rs. 28
C. Rs. 30
D. Rs. 32.5

Answer B

195. A cab on its way to Bangalore overtakes an auto also going in the same direction at 11 am. The cab reaches Bangalore at 1.30 pm and starts the return journey after aking a break of 1 hour. On its way back it meets the auto at 3 pm. At what time will the auto reach Bangalore?

A. 3 p.m.
B. 3.30 p.m.
C. 5 p.m
D. 4 p.m

Answer D

196. If Ajay drives at 4/5th of his usual speed to his office, he is 6 minutes late. What is his usual time to reach his office?

A. 36
B. 24
C. 30
D. 18

Answer B

197. Rajesh has a container which has a mixture of wine and water in it. Wine and water are in the ratio 4:1. Rajesh spills some of the mixture by accident. He then replaces the spilled amount with water of same quantity. But now the wine to water ratio became 3:2. How much water did Rajesh add?

A. 3/5
B. 1/2
C. 1/4
D. 2/7

Answer C

198. Ratio of profits of P, Q and R are 5 : 8 : 9 respectively. What is their investment ratio if their investment time period ratio is 2 : 5 : 8 respectively?

A. 110:74:64
B. 7:13:17
C. 100:64:45
D. 10:40:72

Answer C

199. Anil purchased 30 kg of wheat at the rate of Rs. 22 per kg and 20 kg of wheat at the rate of Rs. 24 per kg. He mixed the two. Approximately at what rate per kg should he sell the mixture to make 25% profit?

A. Rs. 25
B. Rs. 28
C. Rs. 30
D. Rs. 32.5

Answer B

200. One can is completely filled and contains 100% water. Another similar can is completely filled with a solution of 50% wine and 50% water. When both the cans are emptied in a steel vessel, what will be ratio of water to wine in the vessel?

A. 1:1
B. 1:3
C. 2:1
D. 3:1

Answer D

MOCK TEST - 3

MATHS MOCK TEST   Marks: 50

1. The area common to $y^2 = x$ and $x^2 = y$ is.

A. 1
B. 2/3
C. 1/3
D. None of these

Answer C

2. The area bounded by the straight lines y = 0, x + y – 2 = 0 and the straight line which equally divides the common area included between the curves $y = x^2$ and y = is equal to

A. 1 sq. unit
B. 2sq, units
C. 3 sq. units
D. None of these

Answer A

3. The range of the function $f(x) = x / |x|$ is.

A. {−1, 1}
B. R −{0}
C. R – {−1, 1}
D. None of these

Answer A

4. The area cut off from the parabola $4y = 3x^2$ by the straight line 2y=3x+12 is.

A. 25 sq.units
B. 27 sq.units
C. 36 sq.units
D. 16 sq.units

Answer B

5. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?

A. 32
B. 48
C. 64
D. 96

Answer C

6. The radii of two cones are in ratio 2:1, their volumes are equal. Find the ratio of their heights.

A. 1:4
B. 1:3
C. 1:2
D. 1:5

Answer A

7. The least number of complete years in which a sum of money put out at 20% compound interest will be more than doubled is.

A. 4 years
B. 5 years
C. 6 years
D. 7 years

Answer A

8. Find the simple interest on the Rs. 2000 at 25/4% per annum for the period from 4th Feb 2005 to 18th April 2005.

A. Rs 25
B. Rs 30
C. Rs 35
D. Rs 40

Answer A

9. If $x^4 - 3x + 5$ is divided by 2x - 1, then remainder is

A. $\frac{35}{16}$
B. $-\frac{35}{16}$
C. -9
D. 3

Answer C

10. In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together?

A. 360
B. 480
C. 720
D. 5040

Answer C

11. The surface area of a sphere is same as the curved surface area of a right circular cylinder whose height and diameter are 12 cm each. The radius of the sphere is:
A. 4 cm   B. 6 cm
C. 8 cm   D. 10 cm

Answer B

12. Find the compound interest on Rs.16,000 at 20% per annum for 9 months, compounded quarterly.
A. Rs 2520   B. Rs 2521
C. Rs 2522   D. Rs 2523

Answer C

13. Sachin borrows Rs. 5000 for 2 years at 4% p.a. simple interest. He immediately lends money to Rahul at 25/4% p.a. for 2 years. Find the gain of one year by Sachin.
A. 110.50   B. 111.50
C. 112.50   D. 113.50

Answer C

14. The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Rs 1. Find the sum
A. Rs 600   B. Rs 625
C. Rs 650   D. Rs 675

Answer B

15. What is the present worth of Rs. 132 due in 2 years at 5% simple interest per annum
A. 110   B. 120
C. 130   D. 140

Answer B

16. A train speeds past a pole in 15 seconds and a platform 100 m long in 25 seconds. Its length is.
A. 50 m   B. 150 m
C. 200 m   D. Data inadequate

Answer B

17. For a skew symmetric even ordered matrix A of integers, which of the following will not hold true.
A. det(A) = 9   B. det(A) = 81
C. det(A) = 7   D. det(A) = 4

Answer C

18. Which of the following property of matrix multiplication is correct:
A. Multiplication is not commutative in genral
B. Multiplication is associative
C. Multiplication is distributive over addition
D. All of the mentioned

Answer D

19. Two matrices A and B are multiplied to get BA if
A. no of rows of A is equal to no of columns of B
B. no of columns of A is equal to columns of B
C. both have same order
D. both are rectangular

Answer A

20. 13. If A = {1, 2, 3}, B = {3, 4, 5}, then (A ∩ B) x A is
A. {(1, 3), (2, 3), (3, 3)}   B. {(3, 1), (3, 2), (3, 3)
C. {(1, 3), (3, 1), (3, 2)   D. None of these

Answer B

21. Ten years ago, P was half of Q in age. If the ratio of their present ages is 3:4, what will be the total of their present ages
A. 35   B. 34
C. 45   D. 25

Answer A

22. Tanya's grandfather was 8 times older to her 16 years ago. He would be 3 times of her age 8 years from now. What was ratio of ages of Tanya and her grandfather 8 years ago.
A. 11:50   B. 11:51
C. 11:53   D. 11:54

Answer C

23. If the order of matrix A is m×p. And the order of B is p×n. Then the order of matrix AB is ?
A. m × n   B. n × m
C. n × p   D. m × p

Answer A

24. What is the 31st term of the sequence: 1, 4, 7, 10, ... ?
A. 90   B. 91
C. 92   D. 93

Answer B

25. Mutiply XXI by II and what result will you get in Roman number system?
A. XLII   B. XXIII
C. XXXXII   D. LXII

Answer A

26. The notation $f'(x)$ was used for derivative by ?
A. Leibniz
B. Einstein
C. Newton
D. Lagrange

Answer D

27. The HCF of two numbers is 8. Which one of the following can never be their LCM?
A. 24   B. 48
C. 56   D. 60

Answer D

28. The number, whose square is equal to the difference of the squares of the numbers 68 and 32, is.
A. 36   B. 48
C. 60   D. 64

Answer C

29. A method of checking arithmetical calculation such as (+, −, ×, +) etc. is popularly known as :
A. Casting out Nines   B. ARLC Test
C. QED   D. Hopital Rule

Answer A

30. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
A. 210   B. 1050
C. 25200   D. 21400

Answer C

31. The digit in unit's place of the product 49237 x 3995 x 738 x 83 x 9 is
A. 0
B. 7
C. 5
D. 6

Answer C

32. What is the rate of interest, when the PW of Rs 1245 due 15 months hence is Rs 1200?
A. 3%
B. 2%
C. 4%
D. 5%

Answer A

33. For a quadratic equation $ax^2 + bx + c$ sum of root is.
A. b/a
B. −b/a
C. c/a
D. None of Above

Answer . C

34. If $A = \begin{bmatrix} 5 & 3 & 2 \\ 0 & 4 & 1 \\ 0 & 0 & 3 \end{bmatrix}$ then $|A| = ?$
A. 30
B. 40
C. 50
D. 60

Answer D

35. The sum of squares of first 7 prime number also satisfy the Lagrange's Four Square theorem which states that "Every positive integer can be expressed as the sum of four squares". What is the number I am talking about?
A. 666
B. 484
C. 1089
D. 6178

Answer A

36. Transpose of a column matrix is.
A. row matrix
B. zero matrix
C. column matrix
D. dia gonal matrix

Answer A

37. The Top of a 15 metre high tower makes an angle of elevation of $60°$ with the bottom of an electric pole and angle of elevation of $30°$ with the top of pole. Find the height of the electric pole.
A. 7 metre
B. 8 metre
C. 9 metre
D. 10 metre

Answer D

38. Let A = {1, 2, 3} then total number of element in A x A is
A. 3
B. 6
C. 9
D. 12

Answer C

39. Let R be the relation in the set N given by R = {(a, b): a = b − 2, b > 6}. Choose the correct answer.
A. (2, 4) ∈ R
B. (3, 8) ∈ R
C. (6, 8) ∈ R
D. (8, 7) ∈ R

Answer C

40. Polar form of a complex number is
A. $r(\tan\theta + i\cot\theta)$
B. $r(\sec\theta + i\csc\theta)$
C. $r(\cos\theta + i\sin\theta)$
D. $r(\sin\theta + i\cos\theta)$

Answer C

41. $|z_1 + z_2| =$
A. $> |Z_1| + |Z_2|$
B. $= |Z_1| + |Z_2|$
C. $= Z_1 + Z_2$
D. $> Z_1 + Z_2$

Answer B

MATHS MOCK TEST - 3

42. Transpose of a square matrix is a
A. scaler matrix
B. square matrix
C. diagonal matrix
D. rectangular matrix

Answer C

43. If $|A| \neq 0$, then A is
A. non −singular matrix
B. singular matrix
C. diagonal matrix
D. zero matrix

Answer A

44. If α, β be the roots of $x^2 - a(x - 1) - b = 0$, then the value of $\frac{1}{\alpha^2 - a\alpha} + \frac{1}{\beta^2 - a\beta} + \frac{1}{a + b}$ is
(A) 4/(a+b)
(B) 1/(a+b)
(C) 0
(D) 1

Answer C

45. If for all real values of x, $\frac{4x^2+1}{64x^2 - 32 \, x \sin\alpha + 29} > \frac{1}{32}$ then α lies in the interval
(A) $(0, \pi/3)$
(B) $(\pi/3, 2\pi/3)$
(C) $(4\pi/3, 5\pi/3)$
(D) none of these

Answer A

46. In how many different ways can the letters of the word 'LEADING' be arranged such that the vowels should always come together?
A. None of these
B. 720
C. 420
D. 122

Answer B

47. A coin is tossed 3 times. Find out the number of possible outcomes.
A. None of these
B. 8
C. 2
D. 1

Answer B

48. A polygon with 25 sides can be triangulated into
A. 23
B. 20
C. 22
D. 21

Answer A

49. The number of terms in the expansion of $(x^n + y)$ is
A. one more than the index
B. one less than the index
C. same as index
D. none of these

Answer A

50. (?),19,37,61,91,127,169
A. 17
B. 13
C. 11
D. 7

Answer D

MOCK TEST - 3

PHYSICS MOCK TEST

Marks: 5

51. For an object moving in uniform circular motion with constant speed. The direction of The instantaneous acceleration vector is
A. tangent to the path of motion
B. equal to zero
C. directed radially outward
D. directed radially, inward

Answer D

52. The magnetic field of Earth can be modelled by that of a point dipole placed at the centre of the Earth. The dipole axis makes an angle of 11.3° with the axis of Earth. At Mumbai, declination is nearly zero. Then,
A. the declination varies between 11.3° W to 11.3° E
B. the least declination is 0°
C. the plane defined by dipole axis and Earth axis passes through Greenwich
D. declination averaged over Earth must be always negative

Answer A

53. Property of a fluid by which molecules of different kinds of fluids are attracted to each other is called.
A. adhesion   B. cohesion
C. viscosity   D. compressibility

Answer A

54. What is scaled drawing of the various forces, velocities or other vector quantities involved in the motion of a body ?
A. Vector diagram   B. Vector
C. Component   D. Resultant

Answer A

55. "The work done by the net force on a particle equals the change in the particle's kinetic energy." This statement is known as.
A. Law of conservation of energy
B. Work-energy theorem
C. Law of conservation of work
D. Total work theorem

Answer B

56. Among the following which is the best conductor ?
A. Metals   B. Silver
C. Graphite   D. Water

Answer B

57. One horsepower is equivalent to approximately .
A. 650 Watts   B. 750 Watts
C. 850 Watts   D. None of the above

Answer B

58. Which of the following is reversible in action ?
A. Motor generator set   B. Motor converter
C. Rotary converter   D. Any of the above

Answer C

59. The pressure of 1 bar is equivalent to how many pascals ?
A. 1,000,000   B. 100,000
C. 10,000   D. 1000

Answer C

PHYSICS MOCK TEST - 3

60. What is the SI unit of intensity ?
A. Joule/m²   B. kg/m²
C. N/m²   D. watt/m²

Answer D

61. The voltage applied to the 212mH inductor is given by v(t)= $15e^{-5t}$ v. Calculate the current.
A. $16.782e^{-10t}$ B. $15.75e^{-5t}$
C. $11.27e^{-10t}$ D. $14.15e^{-5t}$

Answer D

62. The formula used to find the capacitance C is.
A. Q/v   B. Qv
C. Q-v   D. Q + v

Answer A

63. Purpose of capacitor filter in a rectifier is to.
A. Convert dc to ac   B. convert ac to dc
C. Filter the output   D. retain frequency

Answer C

64. The "kilowatt-hour" is a unit of .
A. work   B. energy
C. power   D. work or energy

Answer D

65. The size of some bacteria and living cells is in the order of .
A. centimetre   B. millimetre
C. nanometer   D. micrometer

Answer D

66. Compared to ultraviolet waves, the wavelength of infrared waves is
A. shorter.   B. longer.
C. faster.   D. slower.

Answer B

67. If the current flowing through an inductor of inductance 0.3Henry is $5.3t^2+4.7t$. Calculate the power.
A. 0   B. 1
C. $16.854t^3+22.41t^2+6.62t$ D. $15.3t^3+27.8t^2+19$

Answer C

68. What is the SI unit of luminous intensity ?
A. Candela   B. Lumens
C. Lux   D. Candlepower

Answer A

69. A semiconductor is formed by _____ bonds.
A. Covalent   B. Electrovalent
C. Co-ordinate   D. None of the above

Answer A

70. A hole and electron in close proximity would tend to.
A. Repel each other
B. Attract each other
C. Have no effect on each other
D. None of the above

Answer B

71. Which component is considered to be an "OFF" device ?
A. Transistor   B. JFET
C. D-MOSFET   D. E-MOSFET

Answer D

72. The image of the object that we see, forms on the retina of our eyes is.
A. always erect
B. always inverted
C. erect or inverted depends upon the intensity of light
D. erect or inverted depends upon the age of the person

Answer   B

73. If an external electric field is applied across the intrinsic semiconductor, then the.
A. More number of electron holes pair combination will be broken
B. More number of electron holes pair combination will be evolved
C. Less number of electron holes pair combination will be broken
D. Less number of electron holes pair combination will be evolved

Answer   A

74. A transistor has a of 250 and a base current, IB, of 20 A. The collector current, IC, equals.
A. 500 A
B. 5 mA
C. 50 mA
D. 5 A

Answer   B

75. The cut - in voltage for silicon and germanium are
A. 0.3 V, 0.3 V
B. 0.3 V, 0.7 V
C. 0.7 V, 0.7 V
D. 0.7 V, 0.3 V

Answer   D

76. Which of the following is true in case of a forward biased p-n junction diode?
A. The positive terminal of the battery sucks electrons from the p-region
B. The positive terminal of the battery injects electrons into the p-region
C. The negative terminal of the battery sucks electrons from the p-region
D. None of the above mentioned statements are true

Answer   A

77. When a pure semiconductor is heated, its resistance.
A. Goes up
B. Goes down
C. Remains the same
D. Can't say

Answer   B

78. Filters are used to convert.
A. Pulsating dc signal into a pure dc signal
B. Pure dc signal into a pulsating dc signal
C. Pulsating dc signal into a pure ac signal
D. Pulsating ac signal into a pure dc signal

Answer   C

79. A pn junction acts as a.
A. Controlled switch
B. Bidirectional switch
C. Unidirectional switch
D. None of the above

Answer   C

80. A "U" shaped, opposite-polarity material built near a JFET-channel center is called the.
A. Gate
B. Block
C. Drain
D. heat sink

Answer   A

81. What is the current gain for a common-base configuration where IE = 4.2 mA and IC = 4.0 mA?
A. 16.80
B. 1.05
C. 0.20
D. 0.95

Answer   C

82. Junction Field Effect Transistors (JFET) contain how many diodes ?
A. 4
B. 3
C. 2
D. 1

Answer   D

83. A cylindrical wire is compressed in length by 10%, The percentage decrease in the resistance will be.
A. 16%
B. 19%
C. 20%
D. 25%

Answer   B

84. Capacitance increases with.
A. Increase in plate area
B. Decrease in plate area
C. Increase in distance between the plates
D. Increase in density of the material

Answer   B

85. To move electrons from valence band to conduction band, the energy applied to the insulator is.
A. Less than 15 eV
B. Equal to 15 eV
C. More than 15 eV
D. More than 25 eV

Answer   B

86. The most commonly used semiconductor is .
A. Germanium
B. Silicon
C. Carbon
D. Sulphur

Answer   B

87. The current gain α of a transistor is 0.995. If the change in emitter current is 10 mA, the change in base current is.
A. 50 μA
B. 100 μA
C. 500 μA
D. 25 μA

Answer   A

88. When a physical contact between a p-region & n-region is established which of the following is most likely to take place?
A. Electrons from N-region diffuse to P-region
B. Holes from P-region diffuse to N-region
C. Both of the above mentioned statements are true
D. Nothing will happen

Answer   C

89. A 100 volt bulb has resistance of 500 ohm. The number of hours it can work for every KWh of energy consumed will be.
A. 20
B. 40
C. 50
D. 60

Answer   C

90. Valence electrons of silicon and germanium are.
A. 2, 4
B. 4, 4
C. 4, 2
D. 2, 2

Answer   B

91. A body can have constant velocity when it follows a.
A. elliptical path
B. circular path
C. parabolic path
D. rectilinear path

Answer   D

92. A semiconductor has .... temperature coefficient of resistance.
A. Positive
B. Zero
C. Negative
D. None of the above

Answer   C

93. A body is thrown vertically upwards and then falls back on the ground. When its potential energy is maximum?
   - A. on the ground
   - B. at the maximum height
   - C. during the return journey
   - D. both on the ground and at the maximum height

   Answer B

94. What is the value of capacitance of a capacitor which has a voltage of 4V and ha 16C of charge.
   - A. 2F
   - B. 4F
   - C. 6F
   - D. 8F

   Answer B

95. Addition of pentavalent impurity to a semiconductor creates many.
   - A. Free electrons
   - B. Holes
   - C. Valence electrons
   - D. Bound electrons

   Answer A

96. Geo-stationary satellite completes one rotation around earth in.
   - A. 3 hours
   - B. 6 hours
   - C. 12 hours
   - D. 24 hours

   Answer D

97. Equation of radiation that is applied to any antenna irrespective of the type of the antenna is:
   - A. iL= Qv
   - B. iQ = Lv
   - C. i/L=Q/v
   - D. None of the mentioned

   Answer A

98. Centripetal force performs.
   - A. maximum work
   - B. minimum work
   - C. negative work
   - D. no work

   Answer D

99. Golden view of sea shell is due to.
   - A. diffraction
   - B. dispersion
   - C. polarisation
   - D. reflection

   Answer A

100. What kind of image is created by a concave lens?
   - A. upright and smaller
   - B. inverted and smaller
   - C. inverted and larger
   - D. upright and smaller

   Answer A

MOCK TEST - 3

CHEMISTRY MOCK TEST   Marks: 20

101. Which among the following is the correct almost equivalent to 1 MMBTU Natural Gas?
   - A. 1.054615 gigajoule
   - B. 0.1054615 gigajoule
   - C. 10.54615 gigajoule
   - D. 105.4615 gigajoule

   Answer A

102. The high reactivity of fluorine is due to?
   - A. small size of fluorine atom
   - B. its high electro negativity
   - C. availability of d-orbital's
   - D. strong F −F bond

   Answer B

103. Haber Process is used to produce which among the following?
   - A. Potash
   - B. Ammonia
   - C. Urea
   - D. Nitrates

   Answer B

104. The alcohol used in the preparation of dynamite is
   - A. ethyl alcohol
   - B. glycerol
   - C. glycol
   - D. methyl alcohol

   Answer D

105. The acid present in lemon is
   - A. lactic acid
   - B. marlic acid
   - C. tartaric acid
   - D. citric acid

   Answer D

106. The oxide of Nitrogen used in medicine as anaesthetic is ?
   - A. Nitrogen pentoxide
   - B. Nitrous oxide
   - C. Nitric oxide
   - D. Nitrogen dioxide

   Answer A

107. Which among the following allotropes of Oxygen is found in 6 phases under various pressures and temperatures?
   - A. Ozone
   - B. Tetra oxygen
   - C. Octaoxygen
   - D. None of them

   Answer C

108. What is metallurgy?
   - A. Process of extracting metal in pure form from its ore.
   - B. Process of creating alloys of metals.
   - C. Process of making metals live long.
   - D. None of above.

   Answer A

109. Ruby is an oxide of
   - A. silver
   - B. gold
   - C. platinum
   - D. aluminium

   Answer D

110. Atoms can neither be created nor destroyed." This principle was given by __?
   - A. Avogadro
   - B. Dalton
   - C. Rutherford
   - D. Rutherford

   Answer B

111. Which of the following substances undergo 'sublimation' on heating
1. Iodine
2. Napthalene
3. Camphor
A. 1 and 2
B. 1 and 3
C. 2 and 3
D. All of them

Answer D

112. Biogas majorly contains?
A. Ethane
B. Methane
C. Hydrogen
D. CO

Answer B

113. The term PVC used in the plastic industry stands for
A. phosphavinyl chloride
B. phosphor vanadiu chloride
C. polyvinyl carbobate
D. polyvinyl chloride

Answer D

114. The ore which is found in abundance in India is
A. monazite
B. bauxite
C. magnetite
D. fluorspar

Answer A

115. Alloys made with mercury as one metal are called ?
A. mixtures
B. emulsions
C. solders
D. amalgams

Answer D

116. Which among the following kinds of Chemical reactions cause the rocks turn red or yellowish?
A. Hydration
B. Oxidation
C. Carbonation
D. Exfoliation

Answer B

117. Which among the following first increases than decreases in a Period of a periodic table?
A. metallic property
B. Chemical Reactiveness
C. Valency
D. Electron affinity

Answer C

118. pH of blood is ?
A. 10.4
B. 9
C. 7.4
D. 4

Answer C

119. The Chemical Symbol of Sodium is
A. So
B. Sd
C. Na
D. Nu

Answer C

120. Which among the following is "Fool's Gold" ?
A. Copper Sulphate
B. Iron Sulfide
C. Brass
D. Silver Bromide

Answer B

MOCK TEST - 3

ENGLISH MOCK TEST   Marks: 40

Passage

China's rising power is based on its remarkable economic success. Shanghai's overall economy is currently growing at around 13% per year, thus doubling in size every five or six years. Everywhere there are start-ups, innovations, and young entrepreneurs hungry for profits. In a series of high level meetings between Chinese and African officials, the advice that the African leaders received from the Chinese was sound, and more practical than they typically get from the World Bank. Chinese officials stress the crucial role of public investments, especially in agriculture and infrastructure, to lay the basis for private sector-led growth. In a hungry and poor rural economy, as China was in the 1970s and as most of Africa is today, a key starting point is to raise farm productivity. Farmers need the benefits of fertilizer, irrigation and high-yield seeds, all of which were a core part of China's economical take off. Two other equally critical investments are also needed: roads and electricity, without which there cannot be a modern economy. Farmers might be able to increase their output, but it won't be able to reach the cities, and the cities won't be able to provide the countryside with inputs.

The government has taken pains to ensure that the electricity grids and transportation networks reach every village in China. China is prepared to help Africa in substantial ways in agriculture, roads, power, health and education. And that is not an empty boast. Chinese leaders are prepared to share new high yield rice varieties, with their African counterparts and, all over Africa, China is financing and constructing basic infrastructure.

This illustrates what is wrong with the World Bank. The World Bank has often forgotten the most basic lessons of development, preferring to lecture the poor and force them to privatize basic infrastructure, which is untenable, rather than to help the poor to invest in infrastructure and other crucial sectors. The Banks' failure began in the early 1980s when under the ideological sway of them American President and British Prime Minister it tried to get Africa and other poor regions to cut back or close down government investments and services. For 25 years, the bank tries to get governments out of agriculture, leaving impoverished peasants to fend for themselves. The result has been a disaster in Africa, with farm productivity stagnant for decades. The bank also pushed for privatization of national health systems, water utilities, and road and power networks, and has grossly underfinanced these critical sectors. This extreme free-market ideology, also called "structural adjustment", went against the practical lessons of development successes in China and the rest or Asia. Practical development strategy recognizes that public investments –in agriculture, health, education, and infrastructure–are necessary complements to private investments.

The World Bank has instead wrongly seen such vital public investments as an enemy of private sector development. Whenever the banks' ideology failed, it has blamed the poor for corruption, mismanagement, or lack of initiative. Instead of focusing its attention on helping the poorest countries to improve their infrastructure, there has been a crusade against corruption. The good news is that African governments are getting the message on how to spur economic growth and are getting crucial help from China and other partners that are less wedded to extreme free-market ideology than the world Bank. They have declared their intention to invest in infrastructure, agriculture modernization, public health, and education. It is clear the Bank can regain its relevance only if it becomes practical once again, by returning its focus to financing public investments in priority sectors. If that happens, the Bank can still do justice to the bold vision of a world of shared prosperity that prompted its creation after World War II.

121. The author's main objective in writing the passage is to.
A. Illustrate how China can play a more concrete role in Africa.
B. Use China's Success as an example of the changes required in World ideology.
C. Recommend that China adopt the guidelines of the World Bank to sustain growth.
D. Make a case for the closure of the World Bank since it promotes US interests over those of other countries.

Answer B

122. What effect has the World Bank policy had on African nations?
A. The African government has restricted private sector investment in agriculture.
B. Africa has focused more on health and education rather than on agriculture.
C. US and Britain have volunteered substantial aid to Africa as Africa has complied with World Bank ideology.
D. The agriculture sector in these countries is not as productive as it could be.

Answer D

123. Which of the following cannot be said about structural adjustment?
A. It is the World Bank's free market ideology adapted by Asian countries.
B. Under this strategy public sector investment in priority sectors is discouraged.
C. As a development strategy it has failed in Africa.
D. With this strategy there has been a lack of adequate investment in critical sectors.

Answer A

124. Why is the author optimistic about Africa's future?
A. Africa has decided to adopt a structural adjustment ideology which has benefited many nations.
B. China has urged the World Bank to waive the interest on its loans to Africa.
C. Africa has committed itself to adopting China's strategy for economic growth.
D. The World Bank has committed itself to invest huge sums in Africa's development.

Answer C

125. What advice has the author given the World Bank?
A. Adopt a more practical ideology of structural adjustment.
B. Change its ideology to one encouraging both public and private sector investment in basic infrastructure.
C. Reduce the influence of the US and Britain in its functioning.
D. Support China's involvement in developing Africa.

Answer B

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that is the opposite meaning of another. It comes from the Greek words **'anti'** for opposite and 'Antonym' for name.

126. A friendly dog meet us at the farmgate.?
A. helpful
B. understanding
C. quiet
D. hostile

Answer D

127. Antonym of GUMPTION is?
A. Apathy
B. Nerve
C. Initiative
D. Sagacity

Answer A

128. Antonym of CANDID?
A. Bluff
B. Devious
C. Equal
D. Blunt

Answer B

129. Antonym of CHIMERICAL?
A. fearful
B. breathtaking
C. serene
D. practical idea

Answer D

130. Antonym of LACONIC?
A. uncivilised
B. talkative
C. erudite
D. livid

Answer B

131. Antonym of SPASMODIC?
A. ill-humoured
B. ancient
C. regular
D. tireless

Answer C

132. Antonym of EXCRUCIATING?
A. mild
B. noisy
C. sophisticating
D. modern

Answer A

Synonym is a word or phrase that means exactly or nearly the **same** as another word or phrase in the same language, for example shut is a synonym of close.

133. PARSIMONIOUS
A. Thrifty
B. Cunning
C. Extravagant
D. Upright

Answer A

134. CONUNDRUM
A. Riddle
B. Dampness
C. Impudence
D. Servility

Answer A

135. GRUFF
A. Rough
B. Hard
C. Tough
D. Cheerless

Answer A

136. Synonym of APATHETIC
A. Caring
B. Concerned
C. Refusing
D. Emotionless

Answer D

137. SUPERANNUATED
A. Experienced
B. Accepted
C. Retired
D. Senile

Answer C

138. DECIMATED
A. Denounced
B. Destroyed
C. Successful
D. Depressed

Answer B

139. Synonym of BENEVOLENCE
A. Kindness
B. Adopt
C. Secure
D. Greetings

Answer A

ENGLISH- FILL IN THE BLANKS

140. She was a devoted wife and looked____ her husband very well.
A. after
B. at
C. for
D. upon

Answer A

141. It is a penal____to bribe a public servant.
A charge
B offence
C code
D tight

Answer B

142. It is inconceivable that in many schools children are subjected to physical____in the name of discipline.
A. violation
B. exercise
C. violence
D. security

Answer C

143.____ at the major ports has led planners to develop satellite ports near them.
A density
B containment
C transportation
D congestion

Answer D

144. Success comes to those who are vigilant not to permit_____ from the chosen path.
A distraction
B deviation
C alienation
D diversion

Answer B

145. All of us are devoted _____ one another.
A. of
B. at
C. to
D. to

Answer C

ENGLISH- ERROR DETECTION

146.
A. Entering the crowded store
B. I saw
C. two vaguely familiar faces.
D. No Error

Answer D

147.
A. It is high time
B. that
C. we leave
D. this place
Explanation: It is high time that we left this place.

Answer C

148.
A. The number of students
B. appearing at the written examination
C. increases every year.
D. No Error

Answer D

149.
A. Since his arrival at the native village
B. he is trying to the best of his power
C. to spread awareness against dowry system.
D. No Error
Explanation: Since his arrival at the native village has been trying to the best of his power to spread awareness against dowry system.

Answer B

150.
A. He was reading
B. very hard for
C. six months
D. still he failed.
Explanation: He had been reading very hard for six months still he failed.

Answer A

151.
A. Another change that I notice
B. in him now-a-days is that
C. he avoids to speak to me.
D. No Error
Explanation: Another change that I notice in him now-a-days is that he avoids speaking to me.

Answer C

152.
A. Hardly the inspector had
B. arrived there to
C. investigate the crime
D. when the house was set ablaze.
Explanation: Hardly had the inspector arrived there to investigate the crime when the house was set ablaze.

Answer C

ENGLISH- CHANGE OF SPEECH

153. My mother says to me", You are not hard working".
A. My mother says to me that I am not hard working.
B. My mother says to me that I was not hard working.
C. My mother says to me that you are not hard working.
D. My mother says to me that you were not hard working.

Answer A

154. A doctor will say, "A nurse will look after patients".
A. A doctor will say that a nurse will look after the patients.
B. A doctor will say that a nurse would look after the patient.
C. A doctor would say that a nurse will look after the patients.
D. A doctor will say that a nurse would be look after the patient.

Answer B

155. You said, "He was in class when you entered".
A. You said that he was in the class when you entered
B. You said that he had in the class when you entered.
C. You said that he has been in the class when you entered.
D. You said that he had been in the class when you entered.

Answer D

156. My father says to me", You are not punctual".
A. My fathe says to me that I am not punctual.
B. My father says to me that I was not punctual.
C. My father says to me that you are not punctual.
D. My father says to me that you were not punctual.

Answer A

157. I told him that he was not working hard.
A. I said to him, "You are not working hard."
B. I told to him, "You are not working hard."
C. I said, "You are not working hard."
D. I said to him, "He is not working hard."

Answer A

ENGLISH- CHANGE OF VOICE

158. Gandhi Ji started the Quit India Movement in 1942.
A. The Quit India Movement was started by Gandhiji in 1942.
B. The Quit India Movement was been started by Gandhiji in 1942.
C. The Quit India Movement had been started by Gandhiji in 1942.
D. The Quit India Movement started by Gandhiji in 1942.

Answer A

159. James Watt discovered the energy of steam.
A. The energy of steam discovered James Watt.
B. The energy of steam was discovered by James Watt.
C. James Watt was discovered by the energy of steam.
D. James Watt had discovered energy by the steam.

Answer B

160. A child could not have done this mischief.
A. This mischief could not be done by a child.
B. This mischief could not been done by a child.
C. This mischief could not have been done by a child.
D. This mischief a child could not have been done.

Answer C

MOCK TEST - 3

APTITUDE MOCK TEST   Marks: 40

161. A trader told his servant Shambhu that he left for his home from the shop after every 2 : 40 hours. I left for home 55 minutes earlier and for the next time I will leave for home from my shop at 8:15 p.m. At which time did I inform my servant?
A. 6 : 30   B. 6 : 00
C. 6 : 15   D. 4 : 20

Answer A

162. In covering a distance of 30 km, Abhay takes 2 hours more than Sameer. If Abhay doubles his speed, then he would take 1 hour less than Sameer. Abhay's speed is:
A. 5 kmph   B. 6 kmph
C. 6.25 kmph   D. 7.5 kmph

Answer A

163. A passenger train takes two hours less for a journey of 300 km if its speed is increased by 5 km/hr from its normal speed. The normal speed is.
A. 35 km/hr   B. 50 km/hr
C. 25 km/hr   D. 30 km/hr

Answer C

164. Careful is to cautious as boastful is to
A. arrogant   B. humble
C. joyful   D. suspicious

Answer A

165. Arrange the following words as per order in the dictionary.
1. Sound   2. Socks
3. Shock   4. sharp
A. 5, 4, 3, 1, 2   B. 4, 3, 5, 2, 1
C. 3, 4, 5, 1, 2   D. 4, 3, 2, 5, 1

Answer B

166. Which word does NOT belong with the others?
A. cornea   B. retina
C. pupil   D. vision

Answer D

167. Elated is to despondent as enlightened is to
A. aware   B. ignorant
C. miserable   D. tolerant

Answer B

168. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

(X)   (1)   (2)   (3)   (4)

A. 1   B. 2
C. 3   D. 4

Answer A

169. Arrange the following words as per their order in the dictionary:
1. Physical　　　2. Physics
3. Physiology　　4. Phone
5. Physician
A. 5,1,4,2,3
B. 5, 1, 2, 3, 4
C. 1,4,5,2,3
D. 4,1,5,2,3

Answer D

170. Which one of the given responses would be a meaningful order of the following?
1. Large intestine 2. Rectum　3. Small intestine 4. Mouth
5. Stomach 6. Esophagus
A. 6, 4, 2, 1, 3, 5
B. 4, 6, 3, 2, 5, 1
C. 4, 6, 5, 3, 1, 2
D. 5, 4, 2, 3, 6, 1

Answer C ,

171. Find odd one out. 2, 5, 10, 17, 26, 37, 50, 64.
A. 50
B. 26
C. 37
D. 64

Answer D

172. Which number is missing?
　　45389, ?, 453, 34
A. 34780
B. 8354
C. 4892
D. 3478

Answer B

173. 4, 10, (?), 82, 244, 730
A. 26
B. 28
C. 40
D. 48

Answer B

174. If x% of y is 100 and y% of z is 200, then find the relation between x and z.
A. z = x
B. 2z = x
C. z = 2x
D. None of above

Answer C

175. A man buys an article for Rs. 27.50 and sells it for Rs 28.60. Find his gain percent
A. 1%
B. 2%
C. 3%
D. 4%

Answer D

176. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).
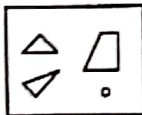
(X)　　　(1)　(2)　(3)　(4)
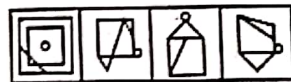
A. 1
B. 2
C. 3
D. 4

Answer C

177. Which word does NOT belong with the others?
A. parsley
B. basil
C. dill
D. mayonnaise

Answer D

178. Window is to pane as book is to
A. novel
B. glass
C. cover
D. page

Answer D

179. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?
A. 564
B. 645
C. 735
D. 756

Answer D

180. How many 4-letter words with or without meaning, can be formed out of the letters of the word, 'LOGARITHMS', if repetition of letters is not allowed?
A. 40
B. 400
C. 5040
D. 2520

Answer C

181. Ten years ago, P was half of Q in age. If the ratio of their present ages is 3:4, what will be the total of their present ages.
A. 35
B. 34
C. 45
D. 25

Answer A

182. Painting : Artist :: Symphony : ?
A. Novelist
B. Poet
C. Essayist
D. Composer

Answer D

183. In a chess tournament each of six players will play every other player exactly once. How many matches will be played during the tournament ?
A. 12
B. 15
C. 30
D. 36

Answer B

184. Find the angle between the hour hand and the minute hand of a clock when 3.25.
A. $47^{\circ}1/2^{\circ}$
B. $48^{\circ}1/2^{\circ}$
C. $49^{\circ}1/2^{\circ}$
D. $50^{\circ}1/2^{\circ}$

Answer A

185. What least number must be subtracted from 427398 so that remaining number is divisible by 15
1. 3
2. 5
3. 7
4. 9

Answer A

186. The ratio between the speeds of two trains is 7: 8. If the second train runs 400 kms in 4 hours, then the speed of the first train is ?
A. 83.5 km/hr
B. 84.5 km/hr
C. 86.5 km/hr
D. 87.5 km/hr

Answer D

187. $4^{61} + 4^{62} + 4^{63} + 4^{64} + 4^{65}$ is divisible by
A. 3
B. 5
C. 11
D. 17

Answer C

188. Nandini stops to walk after covering a distance of 10 km to the west. She then turns to the right and walks 8 km. Again she walks 4 km to the right. How far is she from her office?
A. 18 km
B. 8 km
C. 16 km
D. 10 km

Answer D

189. In a row of children facing North, Bharat is eleventh from the right end and is third to the right of Samir who is fifteenth from the left end. Total how many children are there in the row ?
A. 29
B. 28
C. 30
D. 27

Answer B

190. How many times do the hands of a clock coincide in a day?
A. 20   B. 21
C. 22   D. 24

Answer   C

191. Average weight of 10 people increased by 1.5 kg when one person of 45 kg is replaced by a new man. Then weight of the new man is
A. 50   B. 55
C. 60   D. 65

Answer   C

192. The angle between the minute hand and the hour hand of a clock when the time is 8.30, is:
A. 80°   B. 75°
C. 60°   D. 105°

Answer   B

193. In a certain code, SIKKIM is written as THLJJL, how is TRAINING written in that code?
A. SQBHOHOF   B. UQBHOIOF
C. UQBHOHOI   D. UQBHOHOF

Answer   D

194. In the series 3, 9, 15.. What will be the 21st term?
A. 123   B. 126
C. 129   D. 136

Answer   A

195. A man can row upstream 10 kmph and downstream 20 kmph. Find the man rate in still water and rate of the stream.
A. 0,5   B. 5,5
C. 15,5   D. 10,5

Answer   C

196. Choose the word which is least like the other words.
A. Lung   B. Heart
C. Ear   D. Kidney

Answer   B

197. Choose the odd one.
A. Snake   B. Whale
C. Crocodile   D. Lizard

Answer   B

198. Think of a number, divide it by 4 and add 9 to it. The result is 15. What is the number thought of?
A. 24   B. 25
C. 26   D. 27

Answer   D

199. A and B working separately can complete a piece of work in 9 and 12 days respectively. If they work alternatively starting from A in how many days will the work be completed?
A. 10.25 days   B. 11.5 days
C. 12.75 days   D. 9 days

Answer   A

200. A number is multiplied by its one-third to get 192. Find the number.
A. 16   B. 20
C. 24   D. 28

Answer   C

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MOCK TEST - 4

MATHS MOCK TEST   Marks: 50

1. If the system of linear equations $x + 2ay + az = 0$, $x + 3by + bz = 0$, $x + 4cy + cz = 0$ has a non-zero solution, then a, b, c
A. satisfy $a + 2b + 3c$ B. are in G.P
C. are in A.P   D. are in H.P

Answer   D

2. Number of dimensions a point can have is
A. zero   B. infinite
C. one   D. negative

Answer   D

3. Flat surface like blackboard is classified as
A. vertex plane   B. triangular plane
C. trigonometrical plane   D. plane

Answer   D

4. Considering Cosine rule, $b^2 + c^2 - a^2 / 2bc$ is equal to
A. cos D   B. cos C
C. cos B   D. cos A

Answer   D

5. A class consists of 15 girls and 10 boys. Three students are to be randomly selected. Find the probability that one boy and two girls are picked.
A. $\dfrac{1}{50}$ B. $\dfrac{3}{25}$
C. $\dfrac{21}{46}$ D. $\dfrac{25}{122}$

Answer   C

6. 45% of 640 + 64% of 450 = ? % of 1440
A. 54   B. 40
C. 45   D. 50

Answer   B

7. The differentiation of sinx with respect to cosx is
A. tanx   B. −tanx
C. cotx   D. −cotx

Answer   D

8. 8, 20, 36, 56,
A. 80   B. 100
C. 64   D. 84

Answer   A

9. 11, 33, 55, 77
A. 99   B. 88
C. 121   D. 101

Answer   A

10. 4, 6, 9, 13,
A. 15   B. 12
C. 18   D. 17

Answer   C

11. Three dimensional coordinate system is one in which coordinates intersect each other at
A. negative points   B. zero points
C. positive points   D. absolute points

Answer   B

12. In graphically representation of equation, number of dimensions is determined by
A. number of variables
B. number of quadrants
C. number of octants
D. number of axes

Answer A

13. A square is drawn by joining the mid points of the sides of a given square in the same way and this process continues indefinitely. If a side of the first square is 4 cm, determine the sum of the areas all the square.
A. 32 Cm²
B. 16 Cm²
C. 20 Cm²
D. 64 Cm²

Answer A

14. What are the chances that no two boys are sitting together for a photograph if there are 5 girls and 2 boys?
A. $\frac{1}{21}$
B. $\frac{4}{7}$
C. $\frac{2}{7}$
D. $\frac{5}{7}$

Answer D

15. What is probability of drawing two clubs from a well shuffled pack of 52 cards?
A. $\frac{13}{51}$
B. $\frac{1}{17}$
C. $\frac{1}{26}$
D. $\frac{13}{17}$

Answer B

16. A bag contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the bag, if at least one black ball is to be included in the draw?
A. 64
B. 128
C. 32
D. None of these

Answer A

17. If A={1, 2}, B={2, 3} and C={4}, then A X B X C is.
A. {(1, 2, 4), (2, 2, 4), (1, 3, 4), (2, 3, 4)
B. {(1, 2, 4), (1, 4, 3), (2, 3, 4)
C. {(1, 3, 4), (2, 3, 4), (2, 1, 3), (2, 2, 4)
D. None of these

Answer A

18. If A = {1, 2, 4}, B = {2, 4, 5}, C = {2, 5}, then (A - B) x (B - C) is.
A. {(1, 2), (1, 5), (2, 5)}
B. {(1, 4)}
C. (1, 4)
D. None of these.

Answer B

19. Sachin is younger than Rahul by 7 years. If the ratio of their ages is 7:9, find the age of Sachin.
A. 23.5
B. 24.5
C. 12.5
D. 14.5

Answer B

20. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of this son is.
A. 21 years
B. 22 years
C. 23 years
D. 24 years

Answer B

21. If the volume of two cubes are in the ratio 27:1, the ratio of their edges is:
A. 3:1
B. 3:2
C. 3:5
D. 3:7

Answer A

22. There is a pack of 52 cards and Rohan draws two cards together, what is the probability that one is spade and one is heart ?
A. 11/102
B. 13/102
C. 11/104
D. 11/105

Answer B

23. A relation R is defined on the set of positive integers as xRy if 2x + y ≤ 5 The relation R is.
A. reflexive
B. transitive
C. symmetric
D. None of these

Answer B

24. Function written as y = -4x + 16 is general form of.
A. variate function
B. constant function
C. linear function
D. variable function

Answer C

25. Set of real numbers is denoted by.
A. R
B. Q
C. R'
D. Q'

Answer A

26. A distance between light house and a certain point is 30 m. If angle of elevation of top of lighthouse is 57° then height of pole is
A. 19.46 m
B. 66.52 m
C. 46.19 m
D. 85.23 m

Answer C

27. Consider a right angle triangle ABC, if AB = x, BC = 15, AC = y and angle of A is 47° then values of x and y respectively are.
A. 15.08
B. 16.08
C. 17.08
D. 18.08

Answer B

28. A train 800 metres long is running at a speed of 78 km/hr. If it crosses a tunnel in 1 minute, then the length of the tunnel (in meters) is.
A. 130
B. 360
C. 500
D. 540

Answer C

29. A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?
A. 2 : 1
B. 3 : 2
C. 8 : 3
D. Cannot be determined

Answer C

30. In how many different ways can the letters of the word 'DETAIL' be arranged in such a way that the vowels occupy only the odd positions?
A. 32
B. 48
C. 36
D. 60

Answer C

31. The sum of three numbers is 98. If the ratio of the first to the second is 2:3 and that of the second to the third is 5:8, then the second number is.
A. 10
B. 17
C. 25
D. 30

Answer D

32. If a sum of money doubles itself in 8 years at simple interest, the rate percent per annum is
A. 12
B. 12.5
C. 13
D. 13.5

Answer B

33. 1. Let A and B be two sets in the same universal set. Then A − B =

A. A ∩ B
B. A' ∩ B
C. A ∩ B'
D. None of these

Answer C

34. Let A = {x | x ∈ R, x ⩾ 4} and B = {x ∈ R | x < 5}. Then A ∩ B =

A. (4, 5)
B. (4, 5)
C. (4, 5)
D. (4, 5)

Answer C

35. Rs. 120 are divided among A, B, C such that A's share is Rs. 20 more than B's and Rs. 20 less than C's. What is B's share.

A. Rs 10
B. Rs 20
C. Rs 24
D. Rs 28

Answer B

36. How many words can be formed by using all letters of TIHAR.

A. 100
B. 120
C. 140
D. 160

Answer B

37. If the cost price of 12 items is equal to the selling price of 16 items, the loss percent is

A. 20%
B. 25%
C. 30%
D. 35%

Answer B

38. The least whole number which when subtracted from both the terms of the ratio 6 : 7 to give a ratio less than 16 : 21, is

A. 3
B. 4
C. 5
D. 6

Answer A

39. The angle of elevation of the sun, when the length of the shadow of a tree is √3 times the height of tree, is.

A. 30 degree
B. 45 degree
C. 60 degree
D. 9 degree

Answer A

40. By evaluating 4 sin 25° + 5 tan 35°, answer will be

A. 1.1915
B. 3.1915
C. 4.1915
D. 5.1915

Answer D

41. If XY = 16 and XZ = 45.2 then angle of X and Z respectively are

A. 20.73°, 69.27°
B. 41°, 69°
C. 73°, 27°
D. 20°, 27°

Answer A

42. If x + y = 3, $x^2 + y^2 = 5$ then xy is

A. 1
B. 3
C. 2
D. 5

Answer C

43. In function y = f(x), 'f' is classified as

A. name of function
B. value of function
C. upper limit of function
D. lower limit of function

Answer A

44. The cross product of two parallel vectors is

A. 0
B. 1
C. parallel
D. perpendicular

Answer A

45. As per properties of real numbers with respect to addition, (a + b) c + = a + (b + c) and ∀ a, b, c ∈ R is

A. associative property
B. commutative property
C. closure property
D. additive inverse

Answer A

46. $3x^2 + 2x + 1$ is a

A. polynomial of degree 2
B. polynomial of degree 0
C. polynomial of degree 3
D. polynomial of degree n

Answer A

47. For a skew symmetric odd ordered matrix A of integers, which of the following will hold true.

A. det(A) = 9
B. det(A) = 81
C. det(A) = 0
D. det(A) = 4

Answer C

48. Numbers which can not be expressed as quotient of integers are known as

A. irrational numbers
B. rational numbers
C. whole numbers
D. prime numbers

Answer A

49. What will be the difference between simple and compound interest @ 10% per annum on the sum of Rs 1000 after 4 yrs.

A. Rs 62.10
B. Rs 63.10
C. Rs 64.10
D. Rs 65.10

Answer C

50. A goods train runs at the speed of 72 kmph and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?

A. 230 m
B. 240 m
C. 260 m
D. 270 m

Answer D

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MOCK TEST - 4

PHYSICS MOCK TEST Marks: 50

51. With a motor converter it is possible to obtain D.C. voltage only upto.
A. 200–100 V
B. 600—800 V
C. 1000—1200 V
D. 1700—2000 V

Answer A

52. Insulators are?
A. Material that permit electrons to flow freely from atom to atom and molecule to molecule
B. Material that impede the free flow of neutrons from atom to atom and molecule to molecule
C. Materials that impede the free flow of electrons from atom to atom and molecule to molecule
D. None of the above

Answer C

53. "Every object in the universe attracts every other object with a force directly proportional to the product of their masses and inversely proportional to the square of the distance separating them". This statement is known as ?
A. Law of conservation of energy
B. Law of universal gravitation
C. Law of conservation of momentum
D. Law of conservation of impulse

Answer B

54. Lux is equivalent to which combination of units?
A. $lumen/cm^2$
B. $lumen/ft^2$
C. $lumen/m^2$
D. $lumen/in^2$

Answer C

55. The gravitational force of the earth on an object varies of the _____ the distance of the object from the center of the earth ?
A. inversely as
B. inversely as the square of
C. directly as
D. directly as the square of

Answer B

56. Gravitational attraction is inversely proportional to the
A. Square of the mass
B. Square of the speed
C. Square of the weight
D. Square of the distance

Answer D

57. If α and ß are the current gains in the CB and CE configurations respectively of the transistor circuit, then $\frac{(\beta-\alpha)}{\alpha\beta}$
A. ∞
B. 1
C. 2
D. 0.5

Answer B

58. What refers to physical quantities that are completely specified by just a number and a unit or physical quantities that have magnitudes only ?
A. Scalar quantities
B. Vector product
C. Dot product
D. Vector quantities

Answer A

PHYSICS MOCK TEST- 4

59. The centripetal force is.
A. directed away from the center of the curvature of the path
B. directed toward the center of curvature of the path
C. tangent to the curvature of the path
D. either directed away or toward the center of curvature of the path

Answer B

60. The rate at which velocity changes with time is known as.
A. acceleration
B. instantaneous speed
C. average speed
D. instantaneous velocity

Answer A

61. Light refracts when traveling from air into glass because light
A. travels at the same speed in air and in glass
B. frequency is greater in air than in glass
C. frequency is greater in glass than in air
D. travels slower in glass than in air

Answer C

62. Normally, which of the following is used, when a large-scale conversion from AC. to D.C. power is required ?
A. Motor-generator set
B. Motor converter
C. Rotary converter
D. Mercury arc rectifier

Answer D

63. Electromagnetic waves consist of.
A. compressions and rarefactions
B. vibrating electric and magnetic fields
C. particles of light energy
D. high-frequency gravitational waves

Answer B

64. Majority carriers in an n - type semiconductor are.
A. holes
B. conduction electrons
C. valence electron
D. protons

Answer B

65. Which of the following AC. motors is usually used in large motor-generator sets?
A. Synchronous motor
B. Squirrel cage induction motor
C. Slip ring induction motor
D. Any of the above

Answer A

66. 'An object at rest stays at rest and object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force.' This is which law of Newton?
A. First law of motion
B. Second law of motion
C. Third law of motion
D. None of the above

Answer A

67. The acceleration of an object is?
A. Directly proportional to force
B. Inversely proportional to mass
C. Directly proportional to force and inversely proportional to mass
D. Directly proportional to mass and indirectly proportional to force

Answer C

68. What does Displacement refer to?
A. It refers to how much ground an object has covered
B. It refers to how far out of place an object is
C. It refers to how fast an object is moving
D. It refers to the rate at which an object changes its position

Answer B

69. "When an object exerts a force on another object, the second object exerts on the first a force of the same magnitude but in the opposite direction". This statement is the.
A. first law of motion
B. second law of motion
C. third law of motion
D. d'Alembert's principle

Answer C

70. "If no net force acts on it, an object at rest will remain at rest and an object in motion will remain in motion at constant velocity". This statement is the.
A. first law of motion
B. second law of motion
C. third law of motion
D. d'Alembert's principle

Answer A

71. What is the unit of luminous intensity ?
A. Footcandle
B. Lumen
C. Candela
D. Lux

Answer C

72. What is the standard unit of mass ?
A. Kilogram
B. Pound
C. Gram
D. Newton

Answer A

73. What refers to the force between two stationary surfaces in contact that prevents motion between them ?
A. kinetic friction
B. sliding friction
C. starting friction
D. static friction

Answer D

74. Insulator which is placed between 2 plates of capacitor is.
A. electric
B. dielectric
C. inductor
D. resistor

Answer B

75. When light passes through air into glass, its angle of refraction is
A. less than its angle of incidence.
B. the same as its angle of incidence.
C. more than its angle of incidence.
D. can be more or less than its angle of incidence.

Answer C

76. Vectors are the quantities that are described by.
A. Direction
B. Velocity
C. Magnitude
D. Both magnitude & direction

Answer A

77. What is an elemental unit of energy ?
A. Quartz
B. Quark
C. Photon
D. Quantum

Answer D

78. What is the SI unit of temperature ?
A. Fahrenheit
B. Kelvin
C. Celsius
D. Rankine

Answer B

79. What is the coefficient of restitution for a perfectly inelastic collision ?
A. 0
B. 1
C. Less than 1
D. Greater than 1

Answer B

80. What is the SI unit of pressure ?
A. Pa
B. N –m
C. N/m
D. N –m/s

Answer A

81. A magnet of magnetic moment $50\hat{i}$ $A-m^2$ is placed along the x-axis in a magnetic field $B = (0.5\hat{i} + 3.0\hat{j})T$. The torque acting on the magnet is:
A. $175\ k\ N-m$
B. $150\ k\ N-m$
C. $75\ k\ N-m$
D. $25\sqrt{37}\ k\ N-m$

Answer B

82. If the angles of dip at two places are $30°$ and $45°$ respectively, then the ratio of horizontal components of earth's magnetic field at the two places will be: ?
A. $\sqrt{3} : \sqrt{2}$
B. $1 : \sqrt{3}$
C. $1 : \sqrt{2}$
D. $1 : 2$

Answer A

83. What is the input impedance of a common-gate configured JFET ?
A. very low
B. low
C. high
D. very high

Answer A

84. Most of the electrons in the base of an NPN transistor flow.
A. out of the base lead
B. into the collector
C. into the emitter
D. into the base supply

Answer B

85. For a C-C configuration to operate properly, the collector-base junction should be reverse biased, while forward bias should be applied to which junction ?
A. collector-emitter
B. base-emitter
C. collector-base
D. cathode-anode

Answer A

86. To increase the magnifying power of a telescope, the focal length of
A. Objective lens should be increased.
B. Objective lens should be decreased.
C. Eye-piece lens should be increased.
D. Eye-piece lens should be decreased.

Answer D

87. Coefficient of restitution is the ratio of.
A. relative speed after collision to relative speed before collision
B. relative speed before collision to relative speed after collision
C. relative speed to absolute speed
D. absolute speed to relative speed

Answer A

88. If the common emitter current gain βdc of the transistor used in the amplifier circuit is 200 and the quiescent emitter current is 1 mA, the quiescent base current of the transistor is very nearly equal to
A. 1 mA
B. 1 µA
C. 2 µA
D. 5 µA

Answer D

89. In a transistor, collector current is controlled by.
A. collector voltage
B. base current
C. collector resistance
D. all of the above

Answer B

90. Momentum is the product of?
A. mass and time
B. velocity and mass
C. force and time
D. force and mass

Answer **B**

91. A rectangular tank of depth 8 meter is full of water ( ), the bottom is seen at the depth?
A. 6 m
B. 8/3 m
C. 8 cm
. 10 cm

Answer **A**

92. Which one is equivalent of the unit "Pascal'?
A. N/nm^2
B. N/m^2
C. N/m
D. N/nm

Answer **B**

93. The mass of a grain of salt is in the order of?
A. milligram
B. gram
C. microgram
D. nanogram

Answer **A**

94. Work is defined as the product of ?
A. Force and displacement
B. Force and time
C. Displacement and time
D. Power and time

Answer **A**

95. The vector product of two parallel or antiparallel vectors is always ?
A. equal 1
B. greater than 1
C. less than 1
D. equal to 0

Answer **D**

96. Mercury does not wet glass. This is due to property of liquid known as.
A. adhesion
B. cohesion
C. surface tension
D. viscosity

Answer **C**

97. What is the unit of capacitance?
A. Farad
B. Weber
C. Coulomb
D. Gauss

Answer **A**

98. Fluid is a substance which offers no resistance to change of .
A. pressure
B. flow
C. shape
D. volume

Answer **C**

99. In scalar, there is only addition and subtraction of
A. Number
B. Number according to direction
C. Number according to unit
D. B and C both

Answer **A**

100. What are the two variable on which the amount of momentum of an object is dependent ?
A. Force and Displacement
B. Mass and Force
C. Mass and Displacement
D. Mass and Velocity

Answer **D**

MOCK TEST - 4

CHEMISTRY MOCK TEST
Marks: 20

101. The term PVC used in the plastic industry stands for.
A. polyvinyl chloride
B. polyvinyl carbobate
C. phosphor vanadiu chloride
D. phosphavinyl chloride

Answer **A**

102. The reaction between methane and chlorine in diffused sunlight is.
A. oxidation
B. reduction
C. polymerisation
D. substitution

Answer **D**

103. Radon is.
A. germon radio
B. artificial fibre
C. inert gas
D. an explosive

Answer **C**

104. Which one of the following is not a chemical change?
A. Burning of coal in air
B. Fermentation of sugarcane juice
C. Cracking of petroleum
D. Crystallization of table salt from sea water

Answer **D**

105. The solute in a solution can be separated by.
A. decantation
B. evaporation
C. filtration
D. sedimentation

Answer **B**

106. Nail polish remover contains?
A. benzene
B. acetic acid
C. acetone
D. petroleum ether

Answer **C**

107. Which one is an organic Acid?
A. Sulphuric
B. Citric
C. Nitric
D. Phosphoric

Answer **B**

108. Who proposed first atomic theory ?
A. E.Rutherford
B. De Broglie
C. John Dalton
D. I.Mendeleef

Answer **C**

109. Homo nuclear molecules contain?
A. polar bond
B. covalent bond
C. ionic bond
D. coordinate bond

Answer **B**

110. Which one of the following metals does not react with water to produce Hydrogen?
A. Cadmium
B. Lithium
C. Potassium
D. Sodium

Answer **A**

111. The isotope atoms differ in?
A. number of neutrons
B. atomic number
C. number of electrons
D. atomic weight

Answer **A**

112. The aqueous solution of which among the following acids is called Vinegar?
A. Oxalic acid
B. Citric acid
C. Acetic acid
D. Hydrochloric acid

Answer C

113. Which one of the following gas is readily soluble in water at room temperature?
A. chlorine
B. nitrogen
C. ammonia
D. carbon dioxide

Answer D

114. Which is used in preparation of dynamite?
A. glycerol
B. ethyl alcohol
C. methyl alcohol
D. glycol

Answer A

115. Who is regarded as father of modern chemistry?
A. Rutherford
B. Einstein
C. Lavoisier
D. C.V. Raman

Answer C

116. Which is not a type of elements?
A. Metals
B. Non Metals
C. Metalloids
D. Gases

Answer D

117. What is Calcium sulphate?
A. epsom salt
B. blue vitriol
C. gypsum salt
D. potash alum

Answer C

118. L.P.G. is a hydrocarbon consisting of a mixture of:
A. Methane and Butane
B. Propane and Butane
C. Ethane and Propane
D. Ethane and Butane

Answer B

119. The nuclear particles which are assumed to hold the nucleons together are?
A. positrons
B. neutrons
C. electrons
D. mesons

Answer D

120. What is the atomic number of Transuranic elements?
A. Greater than 90
B. Greater than 92
C. Greater than 91
D. Greater than 93

Answer B

MOCK TEST - 4

ENGLISH MOCK TEST   Marks: 40

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that is the opposite meaning of another. It comes from the Greek words 'anti' for opposite and 'Antonym' for name.

121. Antonym of PIQUE is?
A. Hurt
B. Irk
C. Joy
D. Huff

Answer C

122. Antonym of SARTORIAL is?
A. Homespun
B. Cheerful
C. Inellegant
D. Sincere

Answer A

123. Antonym of DOCILE is?
A. Pliable
B. Pliant
C. Quiet
D. Unyielding

Answer D

124. Antonym of DEXTEROUS is?
A. Inexpert
B. Acute
C. Active
D. Able

Answer A

Synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language, for example shut is a synonym of close.

125. VICARIOUS
A. Ambitious
B. Not experienced personally
C. Nostalgic
D. Vindictive

Answer D

126. BROWBEAT
A. To bully
B. To chase
C. To give a hint
D. To revive

Answer A

127. EXTOL
A. Stea
B. Praise
C. Exterior
D. Excess

Answer A

128. CONTRAPTION
A. Device
B. Valley
C. Forest
D. Window

Answer A

ONE WORD SUBSTITUTION
129. Ascetic
A. One who is in confusion.
B. One who make paintings.
C. One who leads an austere life.
D. One who is lover of beauty.

Answer C

130. Virtuoso
A. Dump performer on stage.
B. Brilliant performer on stage.
C. Dump performer in studies.
D. Brilliant performer in studies.

Answer | B

131. Uxorious
A. extremely fond of one's father.
B. extremely fond of one's sister.
C. extremely fond of one's mother.
D. extremely fond of one's wife.

Answer | D

132. Recluse
A. one who lives in seclusion.
B. one who lives in society.
C. one who lives in temple.
D. one who is always in news.

Answer | A

Directions: Pick out the most effective word from the given words to II in the blanks to make the sentence meaningfully complete.

133. The neighbor grabbed the boy, and rolled him on the road to _____ the flames.
A. cover
B kill
C. burn out
D. fizz out

Answer | B

134. Sam asked me to keep this secret _____.
A. secret
B. in myself
C. amongst us
D. between us

Answer | D

135. Sometimes the greatest inventions _____ an idea of startling simplicity.
A. stumbles upon
B. hinge upon
C. starves without
D. lacks

Answer | B

136. Real friends, genuinely wanting the best for the organization, _____ different garbs.
A. come in
B. clad in
C. dressed in
D. clothed in

Answer | B

Error Detection

137.
A. An Indian ship
B. laden with merchandise
C. got drowned
D. in the Pacific Ocean

Answer | C

Explanation: An Indian ship laden with merchandise sank in the Pacific Ocean.

138.
A. The students were
B. awaiting for
C. the arrival
D. of the chief guest

Answer | B

Explanation: The students awaiting the arrival of the chief guest

139.
A. The minister's speech
B. has been reported
C. to the newspaper
D. No error

Answer | C

Explanation: The minister's speech has been reported in the newspaper.

140.
A. The gentleman
B. together with his wife
C. and children were
D. there

Answer | C

Explanation: The gentleman together with his wife and children was there.

Directions to Solve : -
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

141. Though he dialled frequently
P : on telephone
Q : my brother could not contact me
R : and had left no information
S : as I had gone out of office
The Proper sequence should be:
A. QPRS
B. SQRP
C. QPSR
D. SPQR

Answer | C

142. He said
P : here is the cat
Q : throughout the night
R : which had been paying havoc with things
S : that ate the rat
The Proper sequence should be:
A. PSQR
B. PSRQ
C. QPRS
D. QRPS

Answer | B

143. I saw that
P : but seeing my host in this mood
Q : I deemed it proper to take leave
R : as I had frequently done before
S : it had been my intention to pass the night there
The Proper sequence should be:
A. QPSR
B. QRPS
C. SPQR
D. SRPQ

Answer | D

144. It is very easy
P : a great deal more than one realises
Q : may mean
R : that a phrase that one does not quite understand
S : to persuade oneself
The Proper sequence should be:
A. RSQP
B. SPQR
C. SRQP
D. RQPS

Answer | B

Spelling test - find correct spelling:

145.
A. Abbreviate
B. Abreviate
C. Abrrviate
D. Abbreviat

Answer | A

146.
A. Aceelerate
B. Acelerate
C. Accelerate
D. Acellrate

Answer | C

147.
A. Efficient   B. Treatmeant
C. Beterment   D. Employd

Answer A

148.
A. Foreign   B. Foreine
C. Fariegn   D. Forein

Answer A

Directions to Solve:
In the questions below the sentences have been given in Active/Passive voice. From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.

149. I remember my sister taking me to the museum.
A. I remember I was taken to the museum by my sister.
B. I remember being taken to the museum by my sister.
C. I remember myself being taken to the museum by my sister.
D. I remember taken to the museum by my sister.

Answer B

150. Who is creating this mess?
A. Who has been created this mess?
B. By whom has this mess been created?
C. By whom this mess is being created?
D. By whom is this mess being created?

Answer D

151. They greet me cheerfully every morning.
A. Every morning I was greeted cheerfully.
B. I am greeted cheerfully by them every morning.
C. I am being greeted cheerfully by them every morning.
D. Cheerful greeting is done by them every morning to me.

Answer B

Directions to Solve:
In the questions below the sentences given are Direct/Indirect speech. From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.

152. He said to his father, "Please increase my pocket-money."
A. He told his father, "Please increase the pocket-money"
B. He pleaded his father to please increase my pocket money.
C. He requested his father to increase his pocket-money.
D. He asked his father to increase his pocket-money.

Answer C

153. She said that her brother was getting married.
A. She said, "Her brother is getting married."
B. She told, "Her brother is getting married."
C. She said, "My brother is getting married."
D. She said, "My brother was getting married."

Answer C

154. The boy said, "Who dare call you a thief?"
A. The boy enquired who dared call him a thief.
B. The boy asked who called him a thief.
C. The boy told that who dared call him a thief.
D. The boy wondered who dared call a thief.

Answer A

Directions to Solve: QUESTION TYPE - 2
Each sentence below consist of a word or a phrase which is Underline. It is followed by four words or phrases. Select the word or pharse which is closes to the OPPOSITE in meaning of the bold word or phrase.

155. History *abounds* in instances of courage.
A. shines   B. lack
C. suffices   D. fails

Answer B

156. The inhabitants of the island were *barbarians*.
A. civilized   B. cruel
C. uncivilized   D. bad

Answer A

157. The members thought that the task was *feasible*.
A. impractical   B. impossible
C. difficult   D. impracticable

Answer A

158. *Crestfallen* he returned as he had never faced such humiliation in the whole of his life.
A. vainglorious   B. indignant
C. triumphant   D. disturbed

Answer C

159. In ancient India, scholars had no interest in political power or *material* growth.
A. internal   B. spiritual
C. psychic   D. celestial

Answer B

160.. The atmosphere in that desolate place looked *ominous*.
A. pleasant   B. encouraging
C. auspicious   D. favorable

Answer C

MOCK TEST - 4

APTITUDE MOCK TEST   Marks: 4

161. Oar is to rowboat as foot is to
A. running   B. sneaker
C. skateboard   D. jumping

Answer   C

162. Choose the number that is 1/4 of 1/2 of 1/5 of 200
A. 2   B. 5
C. 10   D. 25

Answer   B

163. A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. The speed of the car is.
A. 100 kmph   B. 110 kmph
C. 120 kmph   D. 130 kmph

Answer   C

164. Arrange the following words as per order in the dictionary.
1. Dyke   2. Dwindle
3. Dwell   4. Dye
A. 3,2,4,1   B. 1,3,4,2
C. 2,1,3,4   D. 3,4,2,1

Answer   A

165. The average score of a cricketer for ten matches is 38.9 runs. the average for the first six matches is 42, then find the average for the last four matches.
A. 33.25   B. 33.5
C. 34.25   D. 35

Answer   C

166. 12 buckets of water fill a tank when the capacity of each tank is 13.5 litres. How many buckets will be needed to fill the same tank, if the capacity of each bucket is 9 litres?
A. 15 bukets   B. 17 bukets
C. 18 bukets   D. 19 bukets

Answer   C

167. Arrange the following words as per order in the dictionary.
1. Follicle 2. Folk, 3. Follow, 4. Foliage
A. 4,2,1,3   B. 3,4,2,1
C. 4,3,1,2   D. 2,4,3,1

Answer   D

168. Which word does NOT belong with the others?
A. dodge   B. flee
C. duck   D. avoid

Answer   B

169. Which word does NOT belong with the others?
A. inch   B. ounce
C. centimeter   D. yard

Answer   B

170. Embarrassed is to humiliated as frightened is to.
A. terrified   B. agitated
C. courageous   D. reckless

Answer   A

171. Find odd one out. 396, 462, 572, 427, 671, 264
A. 396   B. 427
C. 671   D. 264

Answer   B

172. Yard is to inch as quart is to
A. gallon   B. ounce
C. milk   D. liquid

Answer   B

173. Optimist is to cheerful as pessimist is to
A. gloomy   B. mean
C. petty   D. helpful

Answer   A

174. Arrange the following words as per order in the dictionary.
1. Sinister   2. Sinuous
3. Sinhalese   4. Sinusitis   5. Sinecure
A. 5,3,2,4,1   B. 5,2,4,3,1
C. 5,2,1,3,4   D. 5,3,1,2,4

Answer   D

175. Which word does NOT belong with the others?
A. noun   B. preposition
C. punctuation   D. adverb

Answer   C

176. Two dice are tossed. The probability that the total score is a prime number is.
A. $\frac{1}{6}$ B. $\frac{5}{12}$
C. $\frac{1}{2}$ D. $\frac{7}{9}$

Answer   B

177. A man's speed with the current is 20 kmph and speed of the current is 3 kmph. The Man's speed against the current will be
A. 11 kmph   B. 12 kmph
C. 14 kmph   D. 17 kmph

Answer   C

178. A man saves Rs 200 at the end of each year and lends the money at 5% compound interest. How much will it become at the end of 3 years.
A. Rs 662   B. Rs 662.01
C. Rs 662.02   D. Rs 662.03

Answer   C

179. For what value of *, the statement $\frac{*}{15} \times \frac{*}{15} = 1$ is true?
A. 15   B. 25
C. 45   D. 35

Answer   A

180. If a = 4.36, b = 2.39, c = 1.97, then the value of $a^3 - b^3 - c^3 - 3abc$ is
A. 3.94   B. 2.39
C. 0   D. 1

Answer   C

181. Pipe A can fill a tank 5 times faster than Pipe B and takes 32 minutes less than Pipe B to fill the tank. If both the pipes are opened together, then in how much time the tank would be full?
A. 32/3 minutes   B. 32/5 minutes
C. 20/3 minutes   D. 5/32 minutes

Answer   C

85

182. Albert invested amount of 8000 in a fixed deposit for 2 years at compound interest rate of 5% per annum. How much Albert will get on the maturity of the fixed deposit.
A. Rs. 8510
B. Rs. 8620
C. Rs. 8730
D. Rs. 8820

Answer **D**

183. In how many ways can the letters of the CHEATER be arranged.
A. 20160
B. 2520
C. 360
D. 80

Answer **B**

184. Pipe P can fill a tank in 4 hours, pipe Q in 8 hours and pipe R in 24 hours. If all the pipes are open, in how many hours will the tank be filled?
A. 2 hours
B. 2.4 hours
C. 3 hours
D. 3.5 hours

Answer **B**

185. Ram gets Rs. 2600 for Rs. 2000 in 5 years at some rate of simple interest. Had he invested in other places where rate of simple interest is 3% more than current rate, how much would have Ram got in same time?
A. Rs. 2900
B. Rs. 3000
C. Rs. 3100
D. Rs. 2800

Answer **A**

186. Choose the odd one.
A. Mendicant
B. Ascetic
C. Pious
D. Hermit

Answer **C**

187. Find the simple interest on the Rs. 2000 at 25/4% per annum for the period from 4th Feb 2005 to 18th April 2005.
A. Rs 25
B. Rs 30
C. Rs 35
D. Rs 40

Answer **A**

188. Choose the word which is different from the rest.
A. House
B. Cottage
C. School
D. Palace

Answer **C**

189. If the cost price is 25% of selling price. Then what is the profit percent.
A. 150%
B. 200%
C. 300%
D. 350%

Answer **C**

190. Ages of two persons differ by 16 years. If 6 year ago, the elder one be 3 times as old the younger one, find their present age
A. 12,28
B. 14,30
C. 16,32
D. 18,34

Answer **B**

191. A boy was asked to multiply a number by 12. But he multiplied by 21 and got his answer 63 more than the correct answer. The number to be multiplied was
A. 7
B. 9
C. 8
D. 12

Answer **A**

192. On exchanging the digits in unit's and ten's place, the difference between original & new numbers becomes 27. The digit in the unit's place is 2 times the digit in the hundred's place. The digit in the ten's place is 3 times the digit in the hundred's place. What is 75% of the original number?
A. 99
B. 369
C. 297
D. 396

Answer **C**

193. Virat buys an old car for Rs. 50000 and spends Rs. 4000 on its repairs. If he sells the scooter for Rs. 60000, his gain percent is:
A. 3 (4/7) %
B. 11 (1/9) %
C. 12 (2/3) %
D. 12%

Answer **B**

194. Two pipes A and B can fill a cistern in 37.5 minutes and 45 minutes respectively. This cistern will be filled in half an hour if both the pipes are opened together initially and pipe B is then turned off after X minutes. What is X?
A. 10 minutes
B. 15 minutes
C. 12 minutes
D. 9 minutes

Answer **D**

195. P, Q, R subscribe Rs. 50,000 for a business. P subscribes Rs. 4000 more than Q and Q Rs. 5000 more than R. Out of a total profit of Rs. 25,000, what will be P's share?
A. Rs. 8400
B. Rs. 10,500
C. Rs. 13,600
D. Rs. 14,700

Answer **B**

196. How much time does a train 125 metres long running at 60 km/hr take to pass a pole?
A. 6s
B. 2.08s
C. 7.5s
D. 8s

Answer **C**

Explanation:
=> 60 km/hr = 60 * 5/18 = 16.67 m/s, Speed = distance/time; v = d/t, => 16.67 = 125/t,
=> t = 7.5s

197. If Ajay completes a certain work in 8 days and Vijay can complete the same work in 24 days, find the time in which the work will be completed if both Ajay and Vijay work together.
A. 12 days
B. 16 days
C. 6 days
D. 10 days

Answer **C**

198. Sourav walks 20 meters towards North. He then turns left and walks 40 meters. He again turns left and walks 20 meters. Further, he moves 20 meters after turning to right. How far is he from his original position?
A. 48 meters
B. 60 meters
C. 54 meters
D. 58 meters

Answer **B**

199. A car is running at a speed of 90 kmph. What distance will it cover in 15 second?
A. 100 m
B. 255 m
C. 375 m
D. Cannot be determined

Answer **C**

200. Rohit buys some rice at Rs. 10.40 per kg. He mixes it with some rice having price Rs. 8.8 per kg. The final mixture becomes 15kg in weight and with total worth Rs. 146.40. What is the quantity of rice priced at Rs. 8.8 per kg?
A. 9 kg
B. 10 kg
C. 5 kg
D. 6 kg

Answer **D**

MATHS MOCK TEST

Marks: 50

1. The eqn. of plane passing through the point of intersection of the lines $\frac{x-1}{2}=\frac{y}{-1}=\frac{z+3}{1}$

and $\frac{x-4}{1}=\frac{y+3}{1}=\frac{z+3}{2}$ also perpendicular to the planes

$7x + y + 2z = 3$ and $3x + 5y - 6z = 4$ is

A. $x + 3y - 2z - 13 = 0$
B. $x - 3y - 2z - 13 = 0$
C. $x - 3y + 2z - 13 = 0$
D. $x + 3y + 2z + 13 = 0$

| Answer | B |

2. A box has 6 black, 4 red, 2 white and 3 blue shirts. What is probability of picking at least 1 red shirt in 4 shirts that are randomly picked?

A. $\frac{4}{15}$
B. $\frac{24}{455}$
C. $\frac{69}{91}$
D. $\frac{22}{91}$

| Answer | C |

3. On rolling a dice 2 times, the sum of 2 numbers that appear on the uppermost face is 8. What is the probability that the first throw of dice yields 4?

A. $\frac{2}{36}$
B. $\frac{1}{36}$
C. $\frac{1}{6}$
D. $\frac{1}{5}$

| Answer | B |

4. By expressing cos 82° in terms of trigonometrical ratios, answer will be

A. $- \cos 89° = - 0.2319$
B. $- \cos 29° = - 0.8746$
C. $- \cos 38° = - 0.7880$
D. $- \cos 98° = - 0.1392$

| Answer | D |

5. For any acute angle, cosine A is equal to

A. $-\cos (180° - A)$
B. $\cos (180° - A)$
C. $-\cos (180° + A)$
D. $\cos (180° + A)$

| Answer | A |

6. If cos 55° and sin 55° = 0.8 each then answer of 3 cos 125° + 5 sin 125° is

A. 1.6
B. 2.5
C. 2.3
D. 0.6

| Answer | A |

7. A man gains 20% by selling an article for a certain price. If he sells it at double the price, the percentage of profit will be.

A. 130%
B. 140%
C. 150%
D. 160%

| Answer | B |

Explanation : Let the C.P. = x, Then S.P. = (120/100)x = 6x/5
New S.P. = 2(6x/5) = 12x/5, Profit = 12x/5 −x = 7x/5, Profit% = (Profit/C.P.) * 100
=> (7x/5) * (1/x) * 100 = 140 %

8. A spherical balloon is being inflated at the rate of 35 cc/min. The rate of increase of the surface area of the balloon when its diameter is 14 cm is

A. 7 sq. cm/min
B. 10 sq. cm/min
C. 17.5 sq. cm/min
D. 28 sq. cm/min

| Answer | A |

9. Let $\vec{u}, \vec{v}, \vec{w}$ be the three unit vectors such that $\vec{u} + \vec{v} + \vec{w} = \vec{a}$, $\vec{a} . \vec{u} = \frac{3}{2}$, $\vec{a} . \vec{v} = \frac{7}{4}$ and then

A. $\vec{u} . \vec{v} = \frac{3}{4}$
B. $\vec{v} . \vec{w} = 1$
C. $\vec{u} . \vec{w} = \frac{1}{2}$
D. None of these

| Answer | A |

10. Simplify (2 / tanA) + (4 / tanB)

A. (2tanB + 4tanA) / tanAtanB
B. (2tanA + 4tanB) / tanAtanB
C. 6 / (tanA + tanB)
D. None of the above

| Answer | A |

11. Axes in three dimension coordinate system divide plane in three spaces called

A. quadrants
B. space divider
C. dimension divider
D. octants

| Answer | D |

12. Point of intersection of axes in three dimension coordinate system is called

A. collective intercept
B. collective coordinate
C. ordinate
D. parallel pair order

| Answer | C |

13. Find the first term of an AP whose 8th & 12th terms are respectively 39 and 59.

A. 5
B. 6
C. 4
D. 3

| Answer | C |

Solution: 1st Method:
8th term = a+7d = 39 .... (i)
12th term = a+11d = 59 .... (ii), (i)-(ii);
Or, a+7d-a-11d = 39-59; Or, 4d = 20; Or, d = 5; Hence, a+7*5 = 39; Thus, a = 39-35 = 4.

14. A boy agrees to work at the rate of one rupee on the first day, two rupees on the second day, and four rupees on third day and so on. How much will the boy get if he started working on the 1st of February and finishes on the 20th of February?

A. 2^{20}
B. $2^{20}-1$
C. $2^{19}-1$
D. 2^{19}

| Answer | B |

Solution: 1st term = 1; Common ratio = 2;
Sum (S_n) = a*(r-1)/(r-1) = 1*(2^{20}-1)/(2-1) = 2^{20}-1.

15 . A matrix having m rows and n columns with m = n is said to be a

A. scaler matrix
B. identity matrix
C. square matrix
D. rectangular matrix

| Answer | C |

16 . Equations having a common solution are called

A. linear equations
B. simultaneous equations
C. homogeneous equations
D. None of Above

| Answer | C |

17. If a matrix has m rows and n columns then order is

A. m x n
B. m x m
C. m + n
D. n x n

| Answer | A |

18 . Matrices obtained by changing rows and columns is called

A. symetric
B. transpose
C. rectangular matrix
D. None of Above

| Answer | B |

19. Order of a matrix [2 5 7] is
A. 1 x 1
B. 1 x 3
C. 3 x 1
D. 3 x 3

Answer B

20. If the equation $x^3 - 3ax^2 + 3bx - c = 0$ has positive & distinct roots, then
A. $a^2 > b$
B. $ab > c$
C. $a^3 > c$
D. $a^3 > bg > c$

Answer A

21. Consider the equation $x^3 - nx + 1 = 0$, $n \in N$, $n \geq 3$. Then
A. Equation has atleast one rational root .
B. Equation has exactly one rational root.
C. Equation has all real roots belonging to (0, 1).
D. Equation has no rational root.

Answer A

22. Let P(x) and Q(x) be two polynomials. If $f(x) = P(x)^4 + xQ(x)^4$ is divisible by x^2+1, then
A. P(x) is divisible by (x–1)
B. Q(x) is divisible by (x–1)
C. f(x) is divisible by (x–1)
D. all of them

Answer D

23. If α, β be the roots of $4x^2 - 16x + \lambda = 0$, $\lambda \in R$ such that $1 < \alpha < 2$ and $2 < \beta < 3$, then the number of integral solutions of λ is
A. 5
B. 6
C. 3
D. 2

Answer C

24. The solution of the equation $|x + 1|2 - 2|x + 2| - 26 = 0$ is
A. ±7
B. –7, $\sqrt{29}$
C. $\pm\sqrt{29}$
D. –7, 29

Answer B

25. The roots of the equation $(c^2-ab)x^2 - 2(a^2-bc)x + (b^2 - ac) = 0$ are equal then
A. $a^2 + b^3 + c^3 = 3abc$ or a = 0
B. a + b + c = 0
C. $a^2 + b^3 + c^3 = 3abc$ or a = 1
D. none of these

Answer B

26 . [0 0 0] is
A. null matrix
B. Scaler matrix
C. identity matrix
D. diagonal matrix

Answer A

27 . If A is a matrix of order m x n and B is a matrix of order n x p then order of AB is
A. p x n
B. m x p
C. p x m
D. n x p

Answer B

28. How many feet there are in 5 meters? If 1 meter = 3.281 feet.
A. 15.505
B. 15.905
C. 16.405
D. 16.805

Answer C

29. If the number of elements in a set S are 5. Then the number of elements of the power set P(S) are ?
A. 5
B. 6
C. 16
D. 32

Answer D

30. What is the solution interval of the inequality?
6x-2≥3x+10
A. $(\infty, 4)$
B. $(-\infty, 4)$
C. $(-4, \infty)$
D. $(4, \infty)$

Answer D

31. The domain of the function that assign to each pair of integers the maximum of these two integers is.
A. N
B. Z
C. Z^*
D. $Z^* X Z^*$

Answer D

32. In how many ways can the letters of the CHEATER be arranged.
A. 20160
B. 2520
C. 360
D. 80

Answer B

33. A and B together have Rs. 1210. If 4/15 of A's amount is equal to 2/5 of B's amount. How much amount B have.
A. Rs 484
B. Rs. 480
C. Rs 478
D. Rs 470

Answer A

34. Any number in the form of 2p – 1, where p is a prime is known as.
A. Dual Prime
B. Goldbach Prime
C. Mersenne Prime
D. Golden Number

Answer C

35. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is.
A. 3 km/hr
B. 5 km/hr
C. 8 km/hr
D. 9 km/hr

Answer C

36. Find the largest common divisor of 102 and 1170
A. 10
B. 6
C. 7
D. 8

Answer B

37. The lengths of the diagonals of a rhombus are 24 cm and 18 cm, respectively. The lengths of each side of the rhombus is
A. 12 cm
B. 9 cm
C. 15 cm
D. 8 cm

Answer C

38. n(n-1)x.....x3x2x1=?
A. n!
B. ^nC_r
C. ^nP_r
D. n

Answer A

39. If $x^2 + ax + b$ is divided by x + c, then remainder is.
A. $c^2 - ac - b$
B. $c^2 - ac + b$
C. $c^2 + ac + b$
D. $c^2 - ac + b$

Answer A

40. A 300 metre long train crosses a platform in 39 seconds while it crosses a signal pole in 18 seconds. What is the length of the platform?
A. 350 m
B. 320 m
C. 650 m
D. Data inadequate

Answer B

41. Which from the following set has closure property w.r.t multiplication ?
A. {0,–1}
B. {1,–1}
C. {–1}
D. {–1,–1}

Answer B

42. 5 X 4!=?
A. 90
B. 105
C. 120
D. 135

Answer C

43. $4^2 + |4| + |-4| - 4^2 = ?$
A. -4
B. 0
C. 4
D. 8

Answer D

44. What does D represent in Roman numeral system?
A. 100
B. 500
C. 1,000
D. 50

Answer B

45. What is the number called located on the bottom part of a fraction?
A. Numerator
B. Denominator
C. Componendo
D. Ratio

Answer B

46. The golden ratio has been used by many architect in their structural plans for some famous buildings. Which of the following European building has the Golden ratio with its dimension?
A. Parthenon
B. Eiffel Tower
C. Taj Mahal
D. Qutub Minar

Answer A

47. If 5 = V, How does 5,000 written in roman numeral system?
A. V
B. MMMMM
C. MX
D. VM

Answer A

48. What number, a one followed by 100 zeros, was first used by 9 year old Mitton Sirotta in 1940?
A. Googel
B. Googol
C. Golden
D. Round

Answer B

49. What is the largest number of 4 digits which divided by 6,9,12,15 or 18 leaves 1 as reminder in each case?
A. 9901
B. 9899
C. 1081
D. 9673

Answer A

50. The price (in cents) of one orange is 5c. What is the price (in dollars) of one dozen of oranges?
A. 30C
B. 60C
C. $\frac{3C}{5}$
D. $\frac{5C}{12}$

Answer C

MOCK TEST - 5
PHYSICS MOCK TEST

Marks: 50

51. The reactance offered by a capacitor to ac of frequency 50 Hz is 10Ω If the frequency is increased to double, reactance becomes.
A. 20Ω.
B. 5 Ω.
C. 2.5Ω.
D. 10Ω.

Answer A

52. The molecular formula of potassium nitrate is.
A. KNO
B. KNO_3
C. KNO_2
D. KON

Answer B

53. Kalium is the Latin name of .
A. Potassium
B. Krypton
C. Calcium
D. Phosphorus

Answer A

54. The smallest particle of a substance that is capable of independent existence is.
A. Atom
B. Molecule
C. Electron
D. Proton

Answer B

55. In $\frac{16}{8}$ O, the number 16 stands for _____.
A. Atomic number
B. Atomic mass
C. Atomic mass scale
D. Number of electrons

Answer B

56. If the self inductance of 500 turn coil is 125 mH, then the self inductance of similar coil of 800 turns is Options.
A. 48.4 mH
B. 200 mH
C. 187.5 mH
D. 320 mH

Answer D

57. To get three images of a single object, one should have two plane mirrors at an angle of.
A. 60°
B. 90°
C. 120°
D. 30°

Answer B

Solution: Using 360°/x-1. We have angle x=90°

58. The base current of transistor is 100µA and the collector current is 2mA. What is the current gain for the common base configuration?
A. 0.93
B. 0.95
C. 0.90
D. 0.98

Answer B

59. The angle of dip at the magnetic equator of earth is
A. 90°
B. 45°
C. 0°
D. 180°

Answer C

60. Quantum nature of light is explained by which of the following phenomenon?
A. Maxwell electromagnetic theory
B. Huygens wave theory
C. de-Broglie theory
D. Photoelectric effect

Answer D

61. The total energy of a particle executing S.H.M. is proportional
A. Displacement from equilibrium position
B. Frequency of oscillation
C. Velocity in equilibrium position
D. Square of amplitude of motion

Answer D

62. Electromagnetic waves are produced by.
A. accelerated charged particle
B. deaccelerated charged particle
C. charge in uniform motion
D. none of the above

Answer A

63. Beyond which frequency, the ionosphere bends any incident electromagnetic radiation but do not reflect in back towards the earth?
A. 50 MHz
B. 40 MHz
C. 30 MHz
D. 20 MHz

Answer B

64. An electromagnetic radiation has an energy of 13.2 keV. Then, the radiation belongs to the region of.
A. visible light
B. ultraviolet
C. infrared
D. X-ray

Answer B

65. Which of the following is equivalent to the unit "ampere"?
A. joule/second
B. volt/second
C. coulomb/second
D. watt/second

Answer C

66. What is the SI unit of work?
A. Newton
B. Watt
C. Newton-Second
D. Joule

Answer D

67. What is the property of matter which is the reluctance to change its state of rest or of uniform motion?
A. Impulse
B. Momentum
C. Inertia
D. Equilibrium

Answer C

68. Material between conductor and insulator is called.
A. metal
B. transmitter
C. insulator
D. compound

Answer C

69. Color depends on what characteristic of light ?
A. its frequency
B. its wavelength
C. both of these
D. neither of these

Answer A

70. What refers to the force perpendicular to the velocity of an object moving along a curve path ?
A. Centrifugal force
B. Centripetal force
C. Reverse-effective force
D. Gravitational force

Answer A

71. The "kilowatt-hour" is a unit of.
A. work
B. energy
C. power
D. work or energy

Answer D

72. One that is a pentavalent impurity atom is
A. boron
B. indium
C. gallium
D. antimony

Answer D

73. How many dynes are there in one newton?
A. 10,000
B. 100,000
C. 1,000,000
D. 1000

Answer C

74. A rotary converter in general construction and design, is more or less like
A. a transformer
B. an induction motor
C. an alternator
D. any D.C. machine

Answer D

75. In the constant-current region, how will the IDS change in an n-channel JFET ?
A. As VGS decreases ID decreases.
B. As VGS increases ID increases.
C. As VGS decreases ID remains constant.
D. As VGS increases ID remains constant.

Answer A

76. A capacitor consists of.
A. Two conductors
B. Two semiconductors
C. Two dielectrics
D. Two insulators

Answer A

77. Total emitter current is.
A. IE – IC
B. IC + IE
C. IB + IC
D. IB – IC

Answer C

78. Two 1 kilo ohm, 1/2 watt resistor are connected in series, Their combined resistance value and Wattage will be
A. 2 kilo ohm , 1/2 watt
B. 2 kilo ohm , 1 watt
C. 2 kilo ohm , 2 watt
D. 1 kilo ohm , 1/2 watt

Answer B

79. Capacitance decreases with.
A. Increase in distance between the plates
B. Decrease in plate area
C. Decrease in distance between the plates
D. Increase in density of the material

Answer C

80. A disturbance in medium which causes particles of medium to undergo vibratory motion about their mean position in equal intervals of time is known as
A. wave
B. energy
C. vibration
D. amplitude

Answer A

81. The random motion of holes and free electrons due to thermal agitation is called .
A. Diffusion
B. Pressure
C. Ionisation
D. None of the above

Answer A

82. The current through a circuit as function of t is given by i(t) = -3 +t The total charge passing a point between t =99 and t = 102 sec will be
A. 112 coulombs
B. 242.5 coulombs
C. 292.5 coulombs
D. 345.6 coulombs

Answer C

83. Length of a Second's Pendulum is constant, equal to .
A. $g/2\pi$
B. $g/2\pi^2$
C. $g/4\pi$
D. g/π^2

Answer C

84. Waves which require medium for propagation are.
A. electromagnetic
B. mechanical
C. transverse
D. longitudinal

Answer **B**

85. The number of patterns radiation pattern required to specify the characteristic are.
A. Three
B. Four
C. Two
D. Five

Answer **A**

86. The resistance of 100 W, 200 V lamp is .
A. 100 ohm
B. 200 ohm
C. 400 ohm
D. 1600 ohm

Answer **C**

87. In water, hydrogen and oxygen are present in the ratio of.
A. 1:8
B. 2:12
C. 2:3
D. 1:2

Answer **A**

88. An example of a triatomic molecule is.
A. Ozone
B. Nitrogen
C. Carbon monoxide
D. Hydrogen

Answer **A**

89. The quantity of matter present in an object is called its.
A. Mass
B. Volume
C. Density
D. Vapour pressure

Answer **A**

90. Indivisibility of an atom was proposed by.
A. Dalton
B. Rutherford
C. Thomson
D. Bohr

Answer **A**

91. The value of Avogadro constant is.
A. 6.022×10^{24}
B. 6.022×10^{22}
C. 60.22×10^{23}
D. 6.022×10^{23}

Answer **D**

92. All samples of carbon dioxide contain carbon and oxygen in the mass ratio of 3:8. This is in agreement with the Law of.
A. Conservation of Mass
B. Constant Proportion
C. Multiple Proportion
D. Reciprocal Proportion

Answer **B**

93. The atomic mass of sodium is 23. The number of moles in 46g of sodium is.
A. 2
B. 1
C. 4
D. 0

Answer **A**

94. Range of projectile will be minimum if angle of projectile is.
A. 0
B. 30
C. 60
D. 75

Answer **A**

95. When a strong beam of light is passed through a colloidal solution, the light will.
A. be scattered
B. pass unchanged
C. be absorbed
D. be reflected

Answer **A**

96. Due to which phenomena the stick if immersed in water appears to be bent?
A. Reflection
B. Dispersion
C. Refraction
D. Scattering

Answer **C**

97. Pressure is a vector. True or false?
A. True
B. False
Explanation: Pressure is always taken to be normal to the plane of the area on which it is acting. As this direction is unique, it does not need any specification. So pressure is not a vector.

Answer **B**

98. $M^0 L^0 T^{(-1)}$ is an example for.
A. Angular displacement
B. Angular velocity
C. Frequency
D. Time period
Explanation: The rate of change of angular displacement is called angular velocity. It is measured in radian per second and its dimensional formula is $M^0 L^0 T^{(-1)}$

Answer **B**

99. A circular motion is an accelerated motion. True or false?
A. True
B. False
Explanation: In uniform circular motion, the direction of velocity vector which acts along the tangent to the path, remains constant. So circular motion is an accelerated motion.

Answer **A**

100. When a coolie walks on a horizontal platform with a load on his head, the work done by the coolie on the load is zero. True or false?
A. True
B. False

Answer **A**

MOCK TEST - 5

CHEMISTRY MOCK TEST   Marks: 20

101. A cotton wick dipped in pure honey when ignited with a matchstick will ?
A. Burn Consistently
B. Burn with cracking sound
C. Does not burn at all
D. Burns with too much smoke

Answer | A

102. Which among the following is popularly called Hypo?
A. Silver bromide
B. Silver nitrate
C. Sodium thiosulphate
D. Sodium phosphate

Answer | C

103. Both CO_2 and H_2 gases are
A. heavier than air
B. colourless
C. acidic in nature
D. soluble in water

Answer | B

104. When carbon dioxide is passed through lime water,
A. calcium hydroxide is formed
B. white precipitate of CaO is formed
C. lime water turns milky
D. colour of lime water disappears.

Answer | C

105. On immersing an iron nail in $CuSO_4$ solution for few minutes, you will observe
A. no reaction takes place
B. the colour of solution fades away
C. the surface of iron nails acquire a black coating
D. the colour of solution changes to green

Answer | D

106. Organisms link amino acids in chains called polypeptides and
A. Lipids
B. Proteins
C. Fats
D. Sugars

Answer | B

107. Hard Water contains which of the following ?
A. Aluminum
B. Chlorine
C. Calcium
D. Zinc

Answer | C

108. Which among the following is the most important characteristic of Noble metals?
A. Luster
B. Non reactive nature
C. Preciousness
D. Rare availability

Answer | B

109. Which among the following is the lowest atomic number element without any stable isotopes?
A. Technetium
B. Molybdenum
C. Ruthenium
D. Niobium

Answer | A

110. Galena & Litharge are ores of which of the following metals?
A. Mercury
B. Zinc
C. Copper
D. Lead

Answer | D

111. Which among the following elements are generally find in free state?
A. Group 11 elements
B. Group 12 elements
C. Group 13 elements
D. Group 14 elements

Answer | A

112. Which have the maximum density?
A. Water
B. Benzene
C. Ice
D. Chloroform

Answer | A

113. "Atoms can neither be created nor destroyed." This principle was given by ?
A. Avogadro
B. Dalton
C. Rutherford
D. Niels Bohr

Answer | B

114. Nucleus of an atom contains.
A. electrons
B. electrons and protons
C. protons and neutrons
D. electrons and protons

Answer | C

115. Which among the following substances is being used most commonly for producing synthetic jet Fuel?
A. Coal
B. Natural Gas
C. Plastic Waste
D. Biomass

Answer | A

116. The most abundant element in the earth's crust is ?
A. Aluminium
B. Nitrogen
C. Silicon
D. Oxygen

Answer | D

117. When an acid (H^+) is added to alkali (OH^-), product is
A. hydroxides
B. water
C. salts
D. hydrogen gas

Answer | C

118. To keep the hot glass item's finishing and transparency, they go through a process called annealing. This process involves ?
A. cooled rapidly
B. cooled very slowly
C. cooled slowly and uniformly under controlled environment
D. heating rapidly

Answer | C

119. The reaction of H_2 gas with oxygen gas to form water is an example of
A. combination reaction
B. redox reaction
C. exothermic reaction
D. all of these reactions

Answer | A

120. The maximum number of covalent formed by nitrogen is
A. 1
B. 2
C. 3
D. 4

Answer | D

MOCK TEST - 5

ENGLISH MOCK TEST

Marks: 4

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that the **opposite** meaning of another. It comes from the Greek words 'anti' for **opposite** and 'Antonym' for name.

121. Antonym of SYNCHRONOUS?
A. not in working order
B. not in phase
C. without problems
D. without permission

Answer B

122. Antonym of PALTRY?
A. obsolete
B. cautious
C. random
D. plentiful

Answer D

123. Antonym of PROPENSITY?
A. disinclination
B. forecast
C. stagnation
D. restlessness

Answer A

124. Antonym of IMPROMPTU?
A. rehearsed
B. foolish
C. appropriate
D. vast

Answer A

Synonym is a word or phrase that means exactly or nearly the **same** as another word or phrase in the same language, for example shut is a synonym of close.

125. MENIAL
A. Unskilled
B. Tall
C. Affluent
D. Sick

Answer A

126. AUDACITY
A. Strength
B. Boldness
C. Asperity
D. Fear

Answer B

127. Synonym of ABASH
A. Pull out
B. Dislike
C. Embarrass
D. Hearten

Answer C

128. Synonym of ADROIT
A. Haste
B. Inept
C. Clumsy
D. Skilful

Answer D

One Word Substitution

129. Amphibian
A. Animal that live in both land and sea.
B. Animal that live in sea.
C. Animal that live in land.
D. Animal that live at trees.

Answer B

130. Arena
A. A place for hockey.
B. A place for indoor games.
C. A place for racing.
D. A place for wrestling.

Answer D

---

131. Biopsy
A. An examination of tissue removed from a living body.
B. An examination of tissue removed from a dead body.
C. An examination of old bones.
D. An examination of old civilization.

Answer A

132. Asylum
A. A place where joint meeting is held.
B. A place where political refugees are given shelter.
C. A place where refugees are given prosecuted.
D. A place which is having boundary issues between two countries.

Answer B

Directions: Pick out the most effective word from the given words to fill in the blanks to make the sentence meaningfully complete.

133. I had already published a novel and it was an unexpected success. I thought my__ .
A. days were up
B. chances were good
C. lady luck was happy
D. fortune was made

Answer D

134. There was a major accident. The plane crashed. The pilot____ did not see the tower.
A. likely
B. probably
C. scarcely
D. hurriedly

Answer B

135. The car we were travelling in _____ a mile from home.
A. broke off
B. broke down
C. broke into
D. broke up

Answer B

136. What are you_____ in the kitchen cupboard?
A. looking in
B. looking on
C. looking to
D. looking for

Answer D

Read each sentence to find out whether there is any grammatical error in it. The error, if any will be in one part of the sentence. The letter of that part is the answer. If there is no error, the answer is 'D'. (Ignore the errors of punctuation, if any). =>solve as per the direction given above

137.
A. We discussed about the problem so thoroughly
B. on the eve of the examination
C. that I found it very easy to work it out.
D. No error.

Answer A

138.
A. An Indian ship
B. laden with merchandise
C. got drowned in the Pacific Ocean.
D. No error.

Answer C

139.
A. I could not put up in a hotel
B. because the boarding and lodging charges
C. were exorbitant.
D. No error.

Answer A

140.
A. The Indian radio
B. which was previously controlled by the British rulers
C. is free now from the narrow vested interests.
D. No error.
Explanation: is now free from the narrow vested interests.

Answer C

Directions to Solve => solve as per the direction given above
Find the correctly spelt words.

141.
A. Vetarinary
B. Veteninary
C. Vetinary
D. Veterinary
Explanation: Veterinary –pertaining to the medical treatment of animals

Answer D

142.
A. Chancelary
B. Chancellery
C. Chancelery
D. Chancellary

Answer B

143.
A. Excessive
B. Exccessive
C. Exxcesive
D. Excesive

Answer A

144.
A. Indipensable
B. Indipenseble
C. Indispansible
D. Indispensable

Answer D

145.
A. Humorous
B. Ganerous
C. Pupolous
D. Maretorious

Answer A

Directions to Solve:
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

146. Q. When he
P : did not know   Q : he was nervous and R : heard the hue and cry at midnight
S : what to do
The Proper sequence should be:
A. RQPS
B. QSPR
C. SQPR
D. PQRS

Answer A

147. It has been established that
P : Einstein was   Q : although a great scientist
R : weak in arithmetic   S : right from his school days
The Proper sequence should be:
A. SRPQ
B. QPRS
C. QPSR
D. RQPS

Answer B

148. Q. I read an advertisement that said
P : posh, air-conditioned   Q : gentleman of taste
R : are available for   S : fully furnished rooms
The Proper sequence should be:
A. PQRS
B. PSRQ
C. PSQR
D. SRPQ

Answer B

149. Since the beginning of history
P : have managed to catch
R : by a very difficulty method
The Proper sequence should be:
Q : the Eskimos and Red Indians
S : a few specimens of this aquatic animal
A. QRPS
B. SQPR
C. SQRP
D. QPSR

Answer D

Comprehension
The assault on the purity of the environment is the price that we pay for many of the benefits of modern technology. For the advantage of automotive transportation we pay a price in smog-induced diseases; for the powerful effects of new insecticides, we pay a price in dwindling wildlife and disturbances in the relation of living things and their surroundings; for nuclear power, we risk the biological hazards of radiation. By increasing agricultural production with fertilizers, we worsen water population.

The highly developed nations of the world are not only the immediate beneficiaries of the good that technology can do, that are also the first victims of environmental diseases that technology breeds. In the past, the environmental effects which accompanied technological progress were restricted to a small ans relatively short time. the new hazards neither local nor brief. Modern air pollutions covers vast areas of continents: Radioactive fallout from the nuclear explosion is worldwide. Radioactive pollutants now on the earth surface will be found there for generations, and in case of Carbon–14, for thousands of years.

150. The widespread use of insecticides has
A. reduced the number of wild animals
B. caused imbalance in the relationship between living beings and their environment
C. eliminated diseases by killing mosquitoes and flies
D. caused biological hazards

Answer D

151. The passage emphasis that modern technology
A. is an unmixed blessing
B. has caused serious hazards to life
C. has produced powerful chemicals
D. has benefited highly developed nations

Answer B

152. According to the passage the Tncreasing use of fertilisers is responsible for
A. abundance of food
B. disturbance in the ecological system
C. water pollution
D. increase in diseases

Answer C

153. The harmful effects of modern technology are
A. widespread but short-lived
B. widespread and long-lasting
C. limited and long-lasting
D. severe but short-lived

Answer B

154. Radioactive pollutants
A. are limited in their effect
B. will infect the atmosphere for thousands of years
C. will be on the surface of earth for a very long time
D. will dissipate in short span of time

Answer C

Verbal Analogies
Example: Manager : Assistant :: Doctor : ?
A. Chemist   B. Nurse
C. Patient   D. Medicines
Answer: Nurse
As an assistant helps the manager in setting up various meetings, reminders and with daily tasks in the same way a nurse helps a doctor in performing surgeries and operations. So, this is how you have to find similar relationships between words as it is given in the question.

155. Vacant : Occupied :: Weak : ?
A. Feeble   B. Paramount
C. Sturdy   D. None of the above

Answer | C

156. 2 : 8 :: 4 : ?
A. 16   B. 64
C. 128   D. 20

Answer | B

157. Flower : Vase :: Pencil : ?
A. Pen   B. Compass Box
C. Desk   D. All of the above
Explanation: Flowers are kept in vase and pencils are kept in compass box.

Answer | B

158. Fish : Aquarium :: Lion : ?
A. Jungle   B. Den
C. Forest   D. All of the above
Explanation: Here you will often get confused and will select option d. But the correct answer is b. Den. A specific place of living is given like fishes live in aquarium and a specific place where a lion lives is Den.

Answer | B

159. Drake : Duck :: Rooster : ?
A. Goose   B. Hen
C. Doe   D. Sow

Answer | B

160. Man : Mammal :: ? : Rodent
A. Snake   B. Whale
C. Rat   D. Butterfly
Snake –Reptile, Whale –mammal, Butterfly –insect

Answer | C

MOCK TEST - 5

APTITUDE MOCK TEST   Marks: 40

161. What is the probability of getting a sum 9 from two throws of a dice?
A. 1/6   B. 1/8
C. 1/9   D. 1/12

Answer | C

162. Five boys are sitting in a circle. Ajay is between Ramesh & Damanik. Suleman is left to Vikas. Ramesh is left to Suleman. Who is sitting immediate right to Ajay?
A. Suleman   B. Damanik
C. Vikas   D. Ramesh

Answer | D

163. Arrange the following words as per order in the dictionary.
1. Stilt   2. Stie
3. Stink   4. Stingy
A. 3,4,2,1   B. 1,3,4,2
C. 2,1,4,3   D. 2,3,4,1

Answer | C

164. Select the alternative in which the specified components of the key figure (X) are found.

(X)   (1) (2) (3) (4)
A.   1   B.   2
C.   3   D.   4

Answer | D

165. From a pack of 52 cards, two cards are drawn together, what is the probability that both the cards are kings.
A. 2/121   B. 2/221
C. 1/221   D. 1/13

Answer | C

166. Find odd one out. 8, 27, 64, 100, 125, 216, 343.
A. 27   B. 100
C. 125   D. 343

Answer | B

167. Introducing a man, a woman says, "He is the only son of my mother's mother." How is the man related to the woman?
A. Uncle   B. Father
C. Maternal uncle   D. Uncle

Answer | C

168. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
A. 810   B. 1440
C. 2880   D. 50400

Answer | D

169. Play is to actor as concert is to.
A. symphony   B. musician
C. piano   D. percussion

Answer | B

170. Cup is to coffee as bowl is to.
A. dish   B. soup   C. spoon   D. food

Answer   B

171. In a dairy farm, 40 cows eat 40 bags of husk in 40 days. In how many days one cow will eat one bag of husk?
A. 34 days   B. 40 days
C. 46 days   D. 50 days

Answer   B

172. A train traveled at an average speed of 100 km/hr, stopping for 3 minutes after every 75 km. How long did it take to reach its destination 600 km from the starting point.
A. 6 hours 24 mins   B. 6 hours 21 mins
C. 6 hours 18 mins   D. 6 hours 15 mins

Answer   B

173. There are four prime numbers written in ascending order. The product of first three is 385 and that of last three is 1001. The last number is.
A. 9   B. 13
C. 15   D. 12

Answer   B

174. A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
A. 200 Km   B. 222 Km
C. 224 Km   D. 248 Km

Answer   C

175. How many words can be formed from the letters of the word "AFTER", so that the vowels never comes together.
A. 48   B. 52
C. 72   D. 120

Answer   C

176. Simplify : $1 + 2 [3 - \{1 + (2 - \frac{1}{2} - \frac{5}{2})\}]$
A. 2   B. 1
C. -3   D. 5

Answer   C

177. A pineapple costs Rs 7 each and a watermelon costs Rs. 5 each. If I spend Rs 38 on total what is the number of pineapple I purchased?
A. 2   B. 3
C. 4   D. Data Inadequate

Answer   D

178. A sum becomes Rs. 3000 at the rate of 12% per annum (simple interest). The same sum becomes Rs. 3300 at the rate of 15% per annum (simple interest) in the same duration. Find the sum and the duration.
A. Rs. 2000 and 20 years   B. Rs. 1900 and 8.25 years
C. Rs. 1500 and 7 years   D. Rs. 1800 and 5.5 years

Answer   D

179. In 40 years an amount becomes 6 times the original amount. What is the rate of interest?
A. 12.5%   B. 24%
C. 6.67%   D. 34%

Answer   A

180. Pipe P can fill a tank in 38 hours. Pipe Q alone can fill it in 19 hours. Pipe R can empty the full tank in 133 hours. If all the pipes are opened together, how much time will be needed to make the tank full?
A. 28 hours   B. 95 hours
C. 19 hours   D. 14 hours

Answer   D

181. Which word does NOT belong with the others?
A. heading   B. body
C. letter   D. closing

Answer   D

APTITUDE MOCK TEST - 5

182. Marathon is to race as hibernation is to.
A. winter   B. bear
C. dream   D. sleep

Answer   D

183. Look at this series: 8, 43, 11, 41, __, 39, 17, ... What number should fill in the blank?
A. 8   B. 14
C. 43   D. 44

Answer   B

184. Look at this series: 2, 1, (1/2), (1/4), ... What number should come next?
A. $\frac{1}{3}$ B. $\frac{1}{8}$
C. $\frac{2}{8}$ D. $\frac{1}{16}$

Answer   B

185. A natural number is greater than another natural number by 3. The sum of their squares is 89. Find them.
A. 5, 8   B. 11, 8
C. 4, 7   D. 9, 6

Answer   A

186. Solve for the given equation = 121 x 54 =?
A. 68225   B. 75625
C. 76569   D. 45854

Answer   B

Explanation: This question can be solved by 2 approaches:
=> **Direct Multiplication**, => **Numerical Operations**
Direct multiplication is quite time consuming and involves a lot of calculations. An easier approach is based on numerical operations.
=> $121 \times (10/2)^4 = 121 \times 10000/16 = 75625$ (Lesser calculations, Saves time)

187. If in a certain code 3 * 4 ≅ 25 and 6 * 8 = 100 then what is the value of 12 * 5?
A. 144   B. 169   C. 154   D. 178

Answer   B

Explanation: Solution: In this question the pattern * represents a code.
=> $3^2 + 4^2 = 25$ => $6^2 + 8^2 = 100$ => $12^2 + 5^2 = 169$

188. Pipes A and B fill a tank in 5 and 6 hours respectively. Pipe C empties the tank in 12 hours, if you open all the three pipes together this tank will be filled in?
A. 3.9/17 hours   B. 4.5 hours
C. 1.25 hours   D. 4 7/17 hours

Answer   A

189. Two pipes A and B can fill a tank in 12 and 24 minutes respectively. If both the pipes are used together, how long will it take to fill the tank?
A. 9 min   B. 8 min
C. 4 min   D. 6 min

Answer   B

190. A trader purchases several articles at the rate of 13 for Rs. 10 and sells them at the rate of 10 for Rs. 13. What is his gain/loss?
A. 69 % gain   B. 56.25 % gain
C. 56.25 % loss   D. 25 % loss

Answer   A

Explanation: We have, C. P of 13 articles = Rs. 10 & S. P of 10 articles = Rs. 13
=> S. P of 13 articles =   => (13 * 13) / 10 = 16.9
Gain = [(16.9 − 10)/10] * 100 => **69 %**

191. A boy pays Rs. 369 for an article marked at Rs. 600, by enjoying two successive discounts. If the first discount is of 25%, how much should be the second discount?

A. 20 %
B. 10 %
C. 25 %
D. 18 %

Answer D

192. Sourav walks 20 meters towards North. He then turns left and walks 40 meters. He again turns left and walks 20 meters. Further, he moves 20 meters after turning to right. How far is he from his original position?

A. 48 meters
B. 58 meters
C. 54 meters
D. 60 meters

Answer D

193. Speed of a man with current measures 15 km/hr. Speed of current is 2.5 km/hr. What is the speed of man against the current?

A. 12.5 kmph
B. 10 kmph
C. 9 kmph
D. 8.5 kmph

Answer B

194. The 3rd proportional to 18 and 54 is?

A. 144
B. 72
C. 162
D. 972

Answer C

Explanation: In $a:b:3$ proportional is c => $a:b::b:c$ can be written as $\frac{a}{b} = \frac{b}{c}$ => b^2c
=> $a:b:c$ can be written as $a:b::b:c$
Here, $a:b:c = 18:54:c$ => $54 \times 54 = 18 \times c$
=> $c = \frac{54 \times 54}{18}$ = 162

195. Two numbers are in the ratio of 6 : 8. If 10 is subtracted from each, the new numbers are in the ratio 16 : 32. Find the smaller number.

A. 22
B. 12
C. 38
D. 15

Answer D

196. Sheep : Lamb :: Butterfly : ?

A. Larva
B. Caterpillar
C. Pony
D. Cub

Answer B

Explanation: Insect –Larva, Horse –Pony, Lion –Cub

197. Man : Mammal :: ? : Rodent

A. Snake
B. Whale
C. Rat
D. Butterfly

Answer C

Explanation: Snake –Reptile, Whale –mammal, Butterfly –insect

198. Worker : Factory :: Waiter : ?

A. House
B. Restaurant
C. Site
D. Office

Answer B

199. Furniture : Wood :: House : ?

A. Bricks
B. Walls
C. Doors
D. None of the above

Answer A

Explanation: Furniture is made from woods in the same way basic thing required to build a house is bricks.

200. How many times in a day, are the hands of a clock in straight line but opposite in direction?

A. 20
B. 22
C. 24
D. 48

Answer B

MOCK TEST - 6

MATHS MOCK TEST

Marks: 50

1. The cost of the paint is Rs. 36.50 per kg. If 1 kg of paint covers 16 square feet, how much will it cost to paint outside of a cube having 8 feet each side.

A. Rs. 850
B. Rs. 860
C. Rs. 876
D. Rs. 886

Answer C

2. Albert invested amount of 8000 in a fixed deposit for 2 years at compound interest rate of 5 % per annum. How much Albert will get on the maturity of the fixed deposit?

A. Rs. 8510
B. Rs. 8620
C. Rs. 8730
D. Rs. 8820

Answer D

3. The length of the bridge, which a train 130 metres long and travelling at 45 km/hr can cross in 30 seconds, is.

A. 200 m
B. 225 m
C. 245 m
D. 250 m

Answer C

4. A train travelling at a speed of 75 mph enters a tunnel 3 miles long. The train is mile long. How long does it take for the train to pass through the tunnel from the moment the front enters to the moment the rear emerges?

A. 2.5 min
B. 3 min
C. 3.2 min
D. 3.5 min

Answer B

5. What least number must be added to 1056, so that the sum is completely divisible by 23 ?

A. 2
B. 3
C. 18
D. 21

Answer A

6. Total of the ages of A, B ahd C at present is 90 years. Ten years ago, the ratio of their ages was 1: 2: 3. What is the age of B at present

A. 25
B. 30
C. 45
D. 60

Answer B

7. The sum of the present ages of a father and his son is 60 years. Six years ago, father's age was five times the age of the son. After 6 years, son's age will be

A. 15 years
B. 18 years
C. 20 years
D. 22 years

Answer C

8. A man buys an item at Rs. 1200 and sells it at the loss of 20 percent. Then what is the selling price of that item

A. Rs. 660
B. Rs. 760
C. Rs. 860
D. Rs. 960

Answer D

9. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?

A. 756
B. 702
C. 720
D. 726

Answer A

10. Numbers 1, 2, 3, ... Which are used for counting certain objects are called
A. whole numbers
B. natural numbers
C. prime numbers
D. odd numbers

Answer | B

11. If $x^3 + 9x + 5$ is divided by x, then remainder is
A. 9
B. 0
C. –9
D. 5

Answer | D

12. Solution of a quadratic equation $x^2 + 5x - 6 = 0$
A. x = –1, x = 6
B. x = 1, x = –6
C. x = 1
D. x = 6

Answer | B

13. State whether the given statement is true or false. If for a square matrix A and B, null matrix O, AB =O implies A=O and B=O.
A. True
B. False

Answer | B

14. Non-terminating decimal fraction is also known as
A. terminating decimal fraction
B. recurring decimal fraction
C. linear fraction
D. quadratic fraction

Answer | B

15. Decimal fraction in which there are finite number of digits in its decimal part is called.
A. terminating decimal fraction
B. non-terminating decimal fraction
C. linear fraction
D. quadratic fraction

Answer | A

16. If R be a symmetric and transitvie relation on a set A, then
A. R is not reflexive and hence not an equivalence relation
B. R is reflexive and hence an equivalence relation
C. R is reflexive and hence a partial order
D. None of these

Answer | D

17. If determinant of a matrix A is Zero than.
A. A is a Singular matrix
B. A is a non-Singular matrix
C. Can't say
D. None of the mentioned

Answer | A

18. Set of real numbers is denoted by.
A. R
B. Q
C. R'
D. Q'

Answer | A

19. If value of 104 × 96 is.
A. 9984
B. 9469
C. 10234
D. 11324

Answer | A

20. If the decimal representation of a number is non-terminating, Non-repeating then the number is
A. a natural number
B. a rational number
C. a whole number
D. an irrational number

Answer | D

21. State True or False.
The Inverse exist only for non-singular matrices.
A. True
B. False

Answer | A

22. If we include '0' in set of natural number. resulting set is said to be set of
A. whole numbers
B. natural numbers
C. prime numbers
D. odd numbers

Answer | A

23. What is the sum of the following series? -64, -66, -68, ..., -100
A. –1458
B. –1558
C. –1568
D. –1664

Answer | B

24. A sum is invested at compound interest payable annually. The interest including principal in two successive years was Rs. 225 and Rs. 236.25 respectively. The rate of interest was.
A. 4.5%
B. 5%
C. 8%
D. 6.25%

Answer | B

25. If 7n + 9 >100 and n is an integer, then smallest possible value of n is
A. 13
B. 12
C. 14
D. 15

Answer | B

26. What group of numbers does the letter 'i' represent?
A. Imaginary
B. Real
C. Perfect
D. Square

Answer | A

27. What does 1 googol means?
A. 1 followed by hundred zeros
B. 1 followed by thousand zeros
C. 1 followed by ten thousand zeros
D. 1 followed by 1 lakh zeros

Answer | A

28. If we include '0' in set of natural number. resulting set is said to be set of
A. whole numbers
B. natural numbers
C. prime numbers
D. odd numbers

Answer | A

29. Decimal representation are neither terminating nor repeating in blocks for
A. rational numbers
B. irrational numbers
C. linear fraction
D. quadratic fraction

Answer | A

30. The distance between two parallel chords of length 8 cm each in a circle of diameter 10 cm is.
A. 6 cm
B. 7 cm
C. 8 cm
D. 5.5 cm

Answer | A

31. At present age of Alice is x-10 years. What will be her age after 10 years?
A. x+2
B. x-2
C. x+12
D. x-12

Answer | A

32. State True or False:
If for a square matrix A and B, null matrix O,
AB =O implies BA=O:

Answer B

A. True
B. False

33. From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?

Answer D

A. 564
B. 645
C. 735
D. 756

34. Set {...., - 3, - 2, - 1, 0, 1, 2, 3, ...} is said to be

Answer B

A. set of prime numbers
B. set of integers
C. set of even numbers
D. set of irrational numbers

35. If $\frac{x}{2} + 4 = \frac{7}{2}$ then x = ?

Answer B

A. 2
B. –1
C. 1
D. 2

36. Three unbiased coins are tossed, what is the probability of getting at least 2 tails?

Answer C

A. $\frac{1}{3}$
B. $\frac{1}{6}$
C. $\frac{1}{2}$
D. $\frac{1}{8}$

37. Value of $^{16}C_{11} + ^{16}C_{10}$ is

Answer D

A. $^{14}C_{10}$
B. $^{15}C_{11}$
C. $^{17}C_{10}$
D. $^{17}C_{11}$

38. An integer p which is not 0 or ±1 and is divisible by no integer except ±1 and itself is called.

Answer C

A. Rational number
B. Perfect number
C. Prime number
D. Complex number

39. The discount series 10%, 20%, 40% is equivalent to a single discount of.

Answer B

A. 50%
B. 56.8%
C. 60%
D. 62.28%

40. Every set is a _____ of itself.

Answer C

A. Compliment
B. Proper subset
C. Improper subset
D. None of the above

41 . A matrix having m rows and n columns with m ≠ n is said to be a

Answer A

A. scaler matrix
B. identity matrix
C. square matrix
D. rectangular matrix

42 . [a b c] is a

Answer B

A. zero matrix
B. row matrix
C. column matrix
D. diagonal matrix

43. A polygon with 12 sides can be triangulated into

A. 7
B. 10
C. 5
D. 12

Answer B

Explanation: A simple polygon with n sides can be triangulated into n-2 triangles, where n > 2.

44. Let P(n) be the statement that a postage of n cents can be formed using just 3-cents stamps and 5-cents stamps. Is the statements P(8) and P(10) are Correct?

A. True
B. False

Answer A

Explanation: We can form 8 cent of postage with one 3-cent stamp & one 5-cent stamp. P(10) is true because we can form it using two 5-cent stamps.

45. Which amount of postage can be formed using just 4-cent and 11-cent stamps?

A. 2
B. 5
C. 30
D. 10

Answer D

Explanation: We can form 30 cent of postage with two 4-cent stamp and two 11-cent stamp.

46. 3,6,8,16,18,

A. 28
B. 36
C. 54
D. 34

Answer B

Explanation : IInd number is twice of the first and fourth is twice of the third one. So 18 x 2 = 36

47. 12,32,72,152,(?),632

A. 815
B. 613
C. 515
D. 312

Answer D

Explanation : 32–12=20,72–32=40,152–72=80 and so on. It means difference are doubling as 20,40,80,160,320 etc. it otherwise means the required number will be 152+160=312 and 312+320=632

48. 41,14,53,35,73...

A. 72
B. 27
C. 37
D. 13

Answer C

Explanation : Evry second number is reverse of the first e.g.41=14,53=35 and 73=37

49. 128,64,32...?

A. 16
B. 30
C. 8
D. 4

Answer A

Explanation : Each next number is half of the preceding one

50. In a two digit number, the digit in the unit's place is two more than the three times of the digit in ten's place. If the sum of the two digits is 6, the number is

A. 51
B. 24
C. 15
D. 42

Answer C

MOCK TEST - 6

PHYSICS MOCK TEST   Marks: 50

51. If no resistance is encountered by displacement, such a substance is known as
A. fluid
B. water
C. gas
D. ideal fluid.

Answer   D

52. If no resistance is encountered by displacement, such a substance is known as
A. fluid
B. water
C. gas
D. ideal fluid.

Answer   D

53. Property of a fluid by which its own molecules are attracted is called.
A. adhesion
B. cohesion
C. viscosity
D. compressibility

Answer   B

54. A magnet of magnetic moment 2J/T is aligned in the direction of magnetic field of 0.1 T. What is the net work done to bring the magnet normal to the magnetic field ?
A. 0.1 J
B. 0.2 J
C. 1 J
D. 2 J

Answer   B

55. The change in temperature is the result of the gains and losses of _____ during collisions.
A. Potential energy
B. Electrons
C. Kinetic energy
D. Mechanical energy

Answer   C

56. What is the maximum value of the static friction ?
A. Starting friction
B. Sliding friction
C. Kinetic friction
D. Dynamic friction

Answer   A

57. If plates of capacitor are oppositely charged then total charge is equal to.
A. negative
B. positive
C. zero
D. infinite

Answer   C

58. What is another term for kinetic friction ?
A. Dynamic friction
B. Starting friction
C. Sliding friction
D. All of the above

Answer   C

59. What is defined as any influence that can change the velocity of an object ?
A. Impulse
B. Force
C. Energy
D. Work

Answer   B

60. What is the energy something possesses by virtue of its motion ?
A. Kinetic energy
B. Potential energy
C. Rest energy
D. Mechanical energy

Answer   A

61. What is the coefficient of restitution for a perfectly elastic collision ?
A. 0
B. 1
C. Less than 1
D. Greater than 1

Answer   B

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PHYSICS MOCK TEST - 6

62. Diffraction is a result of
A. refraction.
B. reflection.
C. interference.
D. polarization.

Answer   C

63. If a capacitor of capacitance 9.2F has a voltage of 22.5V across it. Calculate the energy of the capacitor.
A. 5062.5W
B. 506.25W
C. 50.625W
D. 50625W

Answer   B

64. Which of the following methods may be used to convert A.C. system to D.C. ?
A. Rectifiers
B. Motor converters
C. Motor-generator sets
D. All of the above

Answer   D

65. For very low frequencies, capacitor acts as.
A. Open circuit
B. Short circuit
C. Amplifier
D. Rectifier

Answer   A

66. The difference between Rheostat and potentometer in the respect that.
A. rheostat has large number of turns
B. rheostat has large number of tapping
C. rheostat has lower wattage rating
D. rheostat has higher wattage ratings

Answer   D

67. The collector supply voltage is 6 V and the voltage drop across a resistor of 600 Ω in the collector circuit is 0.6 V, in a transistor connected in common emitter mode. If the current gain is 20, the base current is.
A. 0.25 Ma
B. 0.05 mA
C. 0.02 mA
D. 0.07 mA

Answer   B

68. The rotational K.E of hoop is equal to the
A. its translational K.E
B. half than its translational K.E
C. double than its translational K.E
D. four times than its translational K.E

Answer   A

69. A body travelling with a speed of more than the velocity of sound in air is said to travel with—
A. supersonic speed
B. hypersonic speed
C. ultrasonic speed
D. infrasonic speed

Answer   A

70. An antenna has a field pattern of E (θ) = cos2θ, θ varies between 0 and 90°. Half power beam width of the antenna is:
A. 330
B. 660
C. 12000
D. None of the mentioned

Answer   B

71. In a semiconductor, current conduction is due to.
A. Only holes
B. Only free electrons
C. Holes and free electrons
D. None of the above

Answer   C

72. Due to which phenomena light rays emerging from a cinema machine spread wide on the screen ?
A. Dispersion
B. Diffraction
C. Scattering
D. Refraction

Answer   B

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73. With the E-MOSFET, when gate input voltage is zero, drain current is.
A. at saturation
B. zero
C. IDSS
D. widening the channel

Answer B

74. Which one of the following lenses should be used to correct the defect of astigmatism?
A. Cylindrical lens
B. Concave lens
C. Convex lens
D. Bifocal lens

Answer A

75. The relation between linear and angular acceleration is
A. $a = a \times r$
B. $a = r \times a$
C. $a = a \times r$
D. $r = a \times a$

Answer C

76. A hoop and disc have same mass and radius. Their rotational K.E are related by an equation
A. K.Ehoop = K.Edisc
B. K.Ehoop = 2K.Edisc
C. K.Ehoop = 1/2K.Edisc
D. K.Ehoop = 4K.Edisc

Answer B

77. The barrier voltage at a pn junction for germanium is about.
A. 5 VA.
B. 3 V
C. Zero
D. 3 V

Answer D

78. Kinetic energy of mass attached to spring at extreme position is.
A. minimum
B. Maximum
C. moderate
D. zero

Answer D

79. When a silicon transistor is properly biased, what is VBE for a C-E configuration?
A. voltage-divider bias
B. 0.3 V
C. 0.7 V
D. 0.0 V

Answer C

80. In CB Configuration of transistor, the input impedance is.
A. High
B. Medium
C. Low
D. none of these

Answer C

81. One radian is equal to.
A. 67.3^0
B. 57.3^0
C. 87.3^0
D. 60^0

Answer B

82. The dimensional formula for Planck's constant and angular momentum are respectively.
A. $[ML^2T^2]$ and $[MLT^{-1}]$
B. $[ML^2T^{-1}]$ and $[ML^2T^{-1}]$
C. $[ML^3T^1]$ and $[ML^2T^{-2}]$
D. $[MLT^{-1}]$ and $[MLT^{-2}]$

Answer B

83. Convex lens always gives a real image if the object is situated beyond.
A. optical centre
B. centre of curvature
C. focus
D. radius of curvature

Answer C

84. If the charge in a capacitor is 4C and the energy stored in it is 4J, calculate the voltage across its plates.
A. 2V
B. 4V
C. 8V
D. 16V

Answer A

85. The maximum velocity of a particle, executing simple harmonic motion with amplitude 7 mm, is 4.4 m/s. The period of oscillation is-
A. 100.00 s
B. 10.00 s
C. 0.10 s
D. 0.01 s

Answer D

86. The speed of a wave is 360 m/s and the frequency is 5 hertz. The phase difference between two points is 600. The path difference between them will be.
A. 0.72 m
B. 1.20m
C. 12.00 m
D. 120.00 m

Answer C

87. Glue comes under example of
A. crystalline solids
B. amorphous solids
C. simple solids
D. compound solids

Answer B

88. Column of manometer which faces liquid is
A. raised
B. depressed
C. compressed
D. remains same

Answer B

89. Mechanical waves in which particles of medium vibrate about their mean position perpendicular to direction of propagation of waves are called.
A. transverse waves
B. longitudinal waves
C. mechanical waves
D. electromagnetic waves

Answer A

90. Number of vibrations of a body in one sec is called
A. frequency
B. amplitude
C. time period
D. vibration

Answer A

91. A disturbance in medium which causes particles of medium to undergo vibratory motion about their mean position in equal intervals of time is known as
A. wave
B. energy
C. vibration
D. amplitude

Answer A

92. If the sheet of a bakelite is inserted between the plates of an air capacitor, the capacitance will
A. decrease
B. increase
C. remains unchanged
D. become zero

Answer B

93. A capacitor stores 0.24 coulombs at 10 volts. Its capacitance is
A. 0.024 F
B. 0.12 F
C. 0.6 F
D. 0.8 F

Answer A

94. Find the strength of magnetic field in a conductor 0.5m long moving with a velocity of 10m/s, inducing an emf of 20V.
A. 1T
B. 2T
C. 3T
D. 4T

Answer D

Explanation: The formula for induced emf is: emf=Blv. Substituting the values of I, emf and v from the question, we get B=4T.

95. What does emf stand for?
A. Electronic magnetic force
B. Electromotive force
C. Electromagnetic force
D. Electromated force

Answer B

Explanation: emf stands for electromotive force. It is the voltage developed by any source of electrical energy.

96. For a spherical mirror, _____ is true.
A. f = 2R
B. R = 2f
C. fR = 2
D. fR = 1/2

Answer | B

97. The mirror formula is _____.
A. 1/u − 1/v = 1/f
B. 1/f + 1/u = 1/v
C. f = uv/(u+v)
D. f = (u+v)/uv

Answer | B

98. The incident ray passing through the focus(F) of a mirror _____ after reflection.
A. passes through C
B. passes through F
C. becomes parallel to the principal axis
D. passes through the pole

Answer | A

99. The incident ray passing through the center of curvature(C) of a mirror ___ after reflection.
A. passes through C
B. passes through F
C. passes through the pole
D. becomes parallel to the principal axis

Answer | C

100. The amplitude of electric field in a parallel light beam of intensity $4\,Wm^{-2}$ is:
A. $35.5\,NC^{-1}$
B. $45.5\,NC^{-1}$
C. $49.5\,NC^{-1}$
D. $55.5\,NC^{-1}$

Answer | D

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MOCK TEST - 6
CHEMISTRY MOCK TEST

Marks: 20

101. Which gas is filled in refrigerators?
A. Chlorofluorocarbon
B. Acetylene
C. Methane
D. Butane

Answer | A

102. Which acid is present in lemon ?
A. marlic acid
B. citric acid
C. lactic acid
D. tartaric acid

Answer | B

103. Gypsum is added to Cement so that, ?
A. setting of cement can be fastened
B. setting of cement can be slowed
C. Cement strength can be improved
D. Cement strength can be controlled

Answer | B

104. Which among the following was first human-made plastic?
A. Bakelite
B. Polyethene
C. Celluloid
D. Nylon

Answer | C

105. The most abundant rare gas in the atmosphere is ?
A. He
B. Ne
C. Ar
D. Xe

Answer | C

106. Phenolphthalein is used in chemistry as a ?
A. Solvent
B. Dye
C. Catalyst
D. Detergent

Answer | B

107. What is the number of known crystalline phases of water?
A. 2
B. 4
C. 10
D. 15

Answer | D

108. Which among the following is major component of Gobar Gas?
A. Butane
B. Ethane
C. Propane
D. Metahne

Answer | D

109. The popular drug "Acetylsalicylic Acid" is commonly known by which among the following names?
A. Paracetamol
B. Aspirin
C. Salsalate
D. Wintergreen

Answer | B

110. For respiration in deep sea, divers use mixture of:
A. Oxygen and helium
B. Oxygen and hydrogen
C. Oxygen and carbon dioxide
D. Oxygen, Helium & nitrogen

Answer | D

111. Consider the following.
1. Copper   2. Zinc   3. Tin
Gun Metal is the alloy of which among the above?
A. 1 & 2
B. 1 & 3
C. 2 & 3
D. 1, 2 & 3

Answer | D

112. Which element found in all organic compounds ?
A. carbon
B. nitrogen
C. calcium
D. none of them

Answer | A

113. The alcohol used in power alcohol is
A. propanol
B. ethyl alcohol
C. methyl alcohol
D. ethylene glycol

Answer | B

114. Washing soda is
A. sodium sulphite
B. sodium bicarbonate
C. sodiun carbonate
D. sodium biosulphite

Answer | C

115. Tobacco is preserved from drying out in.
A. acetone
B. glycol
C. ethanol
D. glycerol

Answer | D

116. Natural rubber is a polymer derived from.
A. ethylene
B. propylene
C. butadiene
D. isoprene

Answer | D

117. pH of water is.
A. 4
B. 12
C. 7
D. 18

Answer | C

118. Lysergic acid diethylamide (LSD) is a drug used as a.
A. Steroid
B. Sedative
C. Analgesic
D. Hallucinogen

Answer | D

119. Discovery of the nucleus of an atom was due to the experiment carried out by.
A. Bohr
B. Rutherford
C. Moseley
D. Thomson

Answer | B

120. The metal that is usually extracted from sea water is.
A. Ca
B. Na
C. K
D. Mg

Answer | D

MOCK TEST - 6

ENGLISH MOCK TEST
Marks: 40

Change of Voice:

121. His pocket has been picked.
A. They have his pocket picked.
B. Picking has been done to his pocket.
C. Picked has been his pocket.
D. Someone has picked his pocket.

Answer | D

122. One should not give unsolicited advice.
A. Unsolicited advice is not to be given.
B. Unsolicited advice can't be given.
C. Unsolicited advice may not be given.
D. Unsolicited advice should not be given.

Answer | D

123. Someone pulled the bull violently.
A. The bull had been pulled violently by someone
B. The bull was to be pulled violently by someone
C. The bull had been pulled violently
D. The bull was pulled violently

Answer | D

124. Circumstances will oblige me to go.(a) I will oblige the circumstances and go.
A. I will oblige the circumstances and go.
B. I shall be obliged to go by the circumstances.
C. Under the circumstances, I should go.
D. I shall be obliged by the circumstances to go.

Answer | D

125. The peon refused him admittance.
A. He was refused admittance by the peon.
B. Admittance is refused to him by the peon.
C. Admittance was refused by the peon to him.
D. Admittance is refused him by the peon.

Answer | A

126. It is time to ring the bell.
A. It is time the bell rings.
B. It is being time to ring the bell.
C. It is time for the bell to ring.
D. It is time for the bell to be rung.

Answer | D

127. If strict security measures were taken, the tragedy might have been _____.
A. The boys who had not done their homework had been punished by their teacher.
B. The boys were punished by their teacher who had not done their homework.
C The boys who had not done their homework were punished by the teacher.
D. The boys who had not done their homework were being punished by the teacher.

Answer | C

128. He was congratulated by his teacher on his brilliant success in the recent examination.
A. His teacher congratulated him on his brilliant success in the recent examination.
B His teacher congratulated him for his success in the examination.
C. His teacher congratulated him on his success.
D. His teacher congratulated him.

Answer | A

129. Whom does he look for?
A. He is looked after for whom?
B. Who is looked after for him?
C. Who is looked for by him?
D. He is looked after by whom?

Answer C

130. Someone has lit the fire.
A. The fire was lit by someone.
B. You are requested to light the fire by someone.
C. The fire has been lit by someone.
D. The fire had been lit by someone.

Answer C

131. Has somebody broken the window?
A. Have the window been broken?
B. Had the window been broken by somebody?
C. Has the window been broken by somebody?
D. d) Has been the window broken?

Answer C

132. The boys elected Mohan captain.
A. The boys were elected captain by Mohan.
B. Mohan was elected captain by the boys.
C. Mohan is elected captain by the boys.
D. Mohan and the boys elected the captain.

Answer B

133. Has a dog ever bitten you?
A. Has a dog ever bites you?
B. Have you ever been bitten by a dog?
C. You are bitten by a dog?
D. Have you ever being bitten by a dog?

Answer B

134. He teaches us grammar.
A. Grammar was taught to us by him.
B. We are taught grammar by him.
C. We were teached grammar by him.
D. Grammar will be teached to us by him.

Answer B

135. The Chairman is ill and we'll have to .... the meeting for a few days.
A. put on   B. put of
C. put away   D. put off

Answer D

136. The cat and the dog have a .... enemy in the rat.
A. same   B. common
C. mutual   D. similar

Answer B

137. He told me that he .... watching the movie.
A. is finished   B. was finished
C. had finished D. not finished

Answer C

138. He is very good .... making stories.
A. in   B. about
C. at   D. for

Answer C

139. I do my work .... carefully to make mistakes.
A. so   B. very
C. too   D. more

Answer C

140. The maidservant left the police station contrite.
A. penitent   B. sore
C. angry   D. remorseless

Answer A

141. Mohinder Amarnath had penchant for hook shots
A. art   B. inclination
C. strength   D. desire

Answer B

142. The early monsoon have brought respite to the people.
A. despite   B. inspite of
C. interval of relief   D. rest

Answer C

143. The resignation of the chief minister is intriguing.
A. curious   B. interesting
C. secret   D. diplomatic

Answer A

144. Ritu asked Rashmi not to meddle in her affairs.
A. intercede   B. impose
C. cross   D. interfere

Answer D

145. The salt spray has gradually......the bridge.
A. spoilt   B. ravaged
C. demolished   D. eroded

Answer D

146. Select the option which contains the correct sentence among four.
A. An one –eyed person was seen roaming about the streets.
B. A one-eyed person was seen roaming about the streets.
C. The one-eyed person was seen roaming about the streets.
D. One-eyed person was seen roaming about the streets

Answer B

147.
A. It is high time he will start earning.
B. It is high time he started earning.
C. It is high time he starts earning.
D. It is high time he has stated earning.

Answer B

148.
A. My sister had left for America last week.
B. My sister has been left for America last week.
C. My sister has left America last week.
D. My sister left for America Last week.

Answer D

149.
A. There is no meaning in what you say.
B. There is no meaning in that you say.
C. There is no meaning as to what you say.
D. There is no meaning that you say

Answer A

150.
a) I am ready to say this at her face.
b) I am ready to say this on her face.
c) I am ready to say this in her face.
d) I am ready to say this to her face.

Answer **D**

151. I am tired I am working since 7 O'clock in the morning.
A. I was working
B. I had been working
C. I have been working
D. no improvement

Answer **C**

152. The teacher gave the students some advice.
A. advices
B. advise
C. advises
D. no improvement

Answer **D**

153. Miss Pillai teacher very well, isn't it ?
A. didn't she
B. doesn't she
C. wasn't it
D. no improvement

Answer **B**

154. The boy told his teacher to explain the passage.
A. asked his teacher
B. said to his teacher
C. invited his teacher
D. no improvement

Answer **A**

155. I couldn't keep track of everything he was saying. He talks at a mile a minute!
A. In a complicated way
B. All unrealistic things
C. Too fast
D. Boasts too much

Answer **C**

SYNONYM – Similar Words

156. Synonym of COMPASSIONATE
A. Crazy
B. Merciful
C. Complex
D. Hatred

Answer **B**

157. Synonym of CONCEAL
A. Harvest
B. To explore
C. Clear
D. Obscure

Answer **D**

158. Synonym of CONTEMPORARY
A. Recent
B. Old
C. Sort of dance
D. Hindrance

Answer **A**

159. Synonym of COWARDICE
A. Thankful
B. Fear
C. Brave
D. Fighter

Answer **B**

160. Synonym of CREDULOUS
A. Joyous
B. Interpret
C. Trusting
D. Interest

Answer **C**

MOCK TEST - 6

APTITUDE MOCK TEST   Marks: 40

161. Raju invested Rs. 77500 in ICICI bank. In two years how much compound interest will he get, if the first year rate of interest was 10% and second year had 2% more than first year?
   A. Rs. 17850
   B. Rs. 17980
   C. Rs. 18963
   D. Rs. 16880

   Answer   B

162. What will be difference in population 3 years ago and 2 years ago of Devon village, whose current population is 100000 and which is increasing at a rate of 25% every year?
   A. 15250
   B. 13900
   C. 16400
   D. 12800

   Answer   D

163. Two pipes M and N can fill a pool in 40 minutes and 60 minutes, respectively. The entire pool can completely be emptied by another pipe P in 30 minutes. M, N and P are opened alternatively and each is kept open for just 1 minute. In how much time will the pool be filled?
   A. 180 minutes
   B. 167 minutes
   C. 177 minutes
   D. 165 minutes

   Answer   B

164. Two pipes A and B can fill a tank in 24 minutes and 32 minutes respectively. If both the pipes are opened simultaneously, after how much time should B be closed so that the tank is full in 18 minutes?
   A. 5 minutes
   B. 6 minutes
   C. 8 minutes
   D. 9 minutes

   Answer   C

165. A pipe is 30 m long and is 45% longer than another pipe. Find the length of the other pipe.
   A. 20.68
   B. 20
   C. 20.12
   D. 20.5

   Answer   A

166. Karishma is taller than Kajal. Kajal is taller than Vimal. Ankita is taller than Kajan and Vimal. Which is the tallest?
   A. Karishma
   B. Kajal
   C. Ankita
   D. None of these

   Answer   D

167. Look at this series: 36, 34, 30, 28, 24, ... What number should come next?
   A. 20
   B. 22
   C. 23
   D. 26

   Answer   B

168. In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?
   A. 6.25
   B. 6.5
   C. 6.75
   D. 7

   Answer   A

169. Select an appropriate answer to replace the question mark from among the choices given.
   A. 11
   B. 6
   C. 3
   D. 2

   Answer   C

APTITUDE MOCK TEST - 6

170. How many litres of pure acid are there in 8 litres of a 20% solution.
   A. 1.5
   B. 1.6
   C. 1.7
   D. 1.8

   Answer   B

171. A number when divided by the sum of 555 and 445 gives two times their difference as quotient and 30 as remainder. The number is
   A. 22030
   B. 220030
   C. 23030
   D. 24030

   Answer   B

172. The ratio between the present ages of P and Q is 6:7. If Q is 4 years old than P, what will be the ratio of the ages of P and Q after 4 years
   A. 7:8
   B. 7:9
   C. 3:8
   D. 5:8

   Answer   A

173. From a point C on a level ground, the angle of elevation of the top of a tower is 30 degree. If the tower is 100 meter high, find the distance from point C to the foot of the tower.
   A. 170 meter
   B. 172 meter
   C. 173 meter
   D. 167 meter

   Answer   C

174. Choose the odd one.
   A. Trivandrum
   B. Bangalore
   C. Bhubaneshwar
   D. Vijayawada

   Answer   D

175. Look at this series: 22, 21, 23, 22, 24, 23, ... What number should come next?
   A. 25
   B. 26
   C. 27
   D. 28

   Answer   A

176. Sum of products of three numbers taken two at a time is 131. Sum of squares of the three numbers is 138. What is the sum of the three numbers?
   A. 25
   B. 30
   C. 20
   D. 22

   Answer   C

   Explanation : All the data given in the question points to the equation mentioned below:
   Considering the three numbers to be a,b and c: $(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$
   Accordingly, substitute for a, b and c and solve : => $a^2+b^2+c^2$= 138, ab+bc+ac = 131.
   Thus, 2(ab+bc+ac)= 2*131= 262 => $(a+b+c)^2$= 138+262= 400. **Therefore, a+b+c= 20**

177. Find the natural number nearest to 9217 which completely divides 88 without giving any remainder.
   A. 9240
   B. 9064
   C. 9184
   D. 9152

   Answer   A

   Explanation : These types of questions are to be solved by trial and error. Make sure minimum amount of time is wasted and your calculations are quick. Devote maximum 1 minute to such questions. Here in this case clearly 9240 is the closest number which divides 88.

178. Suresh for 2 years invested Rs. 500 in SBI. He also invested Rs. 300 in ICICI for 4 years. At the end he received Rs. 220 from both banks as simple interest. What must have been rate of interest?
   A. 10%
   B. 12%
   C. 11%
   D. 5.5%

   Answer   A

179. If the numbers divisible by 3 between 14 and 55 (both inclusive) and the numbers with 3 at unit's place of them are removed then how may numbers will remain?

A. 24
B. 23
C. 22
D. 25

Answer D

180. If 2 is added to the last digit of each number and then the positions of the first and the third digits are interchanged, which of the following will be the highest number?

A. 576
B. 895
C. 783
D. 394

Answer A

181. Look at this series: 8, 6, 9, 23, 87, ... What number should come next?

A. 128
B. 226
C. 324
D. 429

Answer D

182. Find out how will the key figure (X) look like after rotation.
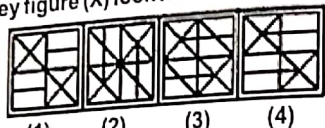
A. 1
B. 2
C. 3
D. 4

Answer D

183. A cistern can be filled in 9 hours but due to a leak at its bottom it takes 10 hours. If the cistern is full, then the time that the leak will take to make it empty will be?

A. 20 hours
B. 19 hours
C. 90 hours
D. 80 hours

Answer C

184. 6, 11, 21, 36, 56, ? what will replace the question mark in the series?

A. 75
B. 81
C. 85
D. 89

Answer B

185. At what time between 4 and 5 o'clock will the hands of a watch point in opposite directions?

A. 45 min. past 4
B. 40 min. past 4
C. 50 $\frac{4}{11}$ min. past 4
D. 54 $\frac{6}{11}$ min. past 4

Answer C

186. Look at this series: 53, 53, 40, 40, 27, 27, ... What number should come next?

A. 12
B. 14
C. 27
D. 53

Answer B

187. Mary, who is sixteen years old, is four times as old as her brother. How old will Mary be when she is twice as old as her brother?

A. 20
B. 24
C. 25
D. 26

Answer B

188. In how many ways a committee, consisting of 5 men & 6 women can be formed from 8 men and 10 women?

A. 266
B. 5040
C. 11760
D. 86400

Answer C

189. Two numbers are less than third number by 30% and 37% respectively. How much percent is the second number less than by the first.

A. 8%
B. 9%
C. 10%
D. 11%

Answer C

190. A tank can be filled by two pipes A and B in 60 minutes and 40 minutes respectively. How many minutes will it take to fill the tank from empty state if B is used for the first half time and then A and B fill it together for the other half.

A. 15 mins
B. 20 mins
C. 25 mins
D. 30 mins

Answer D

191. In how many way the letter of the word "APPLE" can be arranged.

A. 20
B. 40
C. 60
D. 80

Answer C

192. Annihilation : Fire :: Cataclysm : ?

A. Earthquake
B. Flood
C. Emergency
D. Steam

Answer B

193. A person travels equal distances with speed of 3 km/hr, 4 km/hr & 5 km/hr and takes a total of 47 minutes. Find the total distance.

A. 3 km
B. 4 km
C. 6 km
D. 9 km

Answer A

194. A man is walking at the rate of 5 km/hr crosses a bridge in 15 minutes. The length of the bridge is.

A. 1000 meters
B. 1050 meters
C. 1200 meters
D. 1250 meters

Answer D

195. A shopkeeper fixes the marked price of an item 35% above its cost price. The percentage of discount allowed to gain 8% is.

A. 18%
B. 20%
C. 22%
D. 24%

Answer B

196. From a group of 7 men and 6 women, five persons are are there to be selected to form a committee so that at least 3 men on the committee. In how many ways can it be done?

A. 456
B. 556
C. 656
D. 756

Answer D

197. Fear : Threat :: Anger : ?

A. Compulsion
B. Panic
C. Provocation
D. Force

Answer D

198. 280 oranges are divided among some boys and girls whose total number is 50 so that each boy gets 5 oranges and each girl get 7 oranges. The number of girls is

A. 30
B. 35
C. 15
D. 20

Answer C

199. The reflex angle between the hands of a clock at 10.25 is:

A. 180°

B. $192 \frac{1}{2}°$

C. 195°

D. $197 \frac{1}{2}°$

Answer D

200. The population of a city is 50,000 at present. It increases at the rate of 10% per annum. What will be its population 3 yr from now?

A. 67,250

B. 65,550

C. 60,500

D. 66,550

Answer D

MOCK TEST - 7

MATHS MOCK TEST
Marks: 50

1. What is the probability of getting a sum 9 from two throws of dice.

A. $\frac{1}{3}$

B. $\frac{1}{9}$

C. $\frac{1}{12}$

D. $\frac{2}{9}$

Answer B

2. In how many words can be formed by using all letters of the word BHOPAL

A. 420

B. 520

C. 620

D. 720

Answer D

3. A cistern 6 m long and 4 m wide contains water up to a breadth of 1 m 25 cm. Find the total area of the wet surface.

A. 42 m sqaure

B. 49 m sqaure

C. 52 m sqaure

D. 64 m sqaure

Answer B

4. Two trains are moving in opposite directions @ 60 km/hr and 90 km/hr. Their lengths are 1.10 km and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is:

A. 36

B. 45

C. 48

D. 49

Answer C

5. Speed of a boat in standing water is 9 kmph and the speed of the stream is 1.5 kmph. A man rows to a place at a distance of 105 km and comes back to the starting point. The total time taken by him is:

A. 16 hours

B. 18 hours

C. 20 hours

D. 24 hours

Answer D

6. What is the sum of all positive integers up to 1000, which are divisible by 5 and are not divisible by 2?

A. 10,050

B. 5050

C. 5000

D. 50,000

Answer D

7. if x:y = 1:3, then find the value of (7x+3y):(2x+y)

A. 14:5

B. 15:5

C. 16:5

D. 17:5

Answer C

8. A compound statement of form " if p then q " is called an

A. implication

B. hypothesis

C. conclusion

D. unknown

Answer A

9. Set of integers is denoted by

A. N

B. W

C. A

D. Z

Answer D

10. Bag contain 10 back and 20 white balls, One ball is drawn at random. What is the probability that ball is white

Answer	B

A. $\frac{2}{3}$
B. $\frac{1}{3}$
C. $\frac{1}{3}$
D. $\frac{4}{3}$

11. 66 cubic centimetres of silver is drawn into a wire 1 mm in diameter. The length if the wire in meters will be:

Answer	C

A. 76 m
B. 80 m
C. 84 m
D. 88 m

12. The sum of first five prime numbers is.

Answer	D

A. 11
B. 18
C. 26
D. 28

13. If n is a natural number, then $(6n^2 + 6n)$ is always divisible by.

Answer	B

A. 6 only
B. 6 and 12 both
C. 12 only
D. by 18 only

14. Sum of first six terms of series 1+7+13+... is

Answer	D

A. 12
B. 24
C. 48
D. 96

15. A triangle whose sides are 15cm, 36cm, and 39cm is

Answer	A

A. Right angled
B. Equilateral
C. isosceles
D. none of above

16. A certain sum amount to Rs 5832 in 2 yr at 8% per annum compound interest, the sum is.

Answer	A

A. Rs 5000
B. Rs 5200
C. Rs 5280
D. Rs 5400

17. Mr. A can do a particular work in 6 hours, and Mr. B can do the same work in 14 hours. How much time it will take if they do the work together?

Answer	B

A. 4 hours and 6 minutes
B. 4 hours and 12 minutes
C. 4 hours and 18 minutes
D. 4 hours and 24 minutes

18. A river 3 m deep and 40 m wide is owing at the rate of 2 km/h. How much water (in liters) will fall into the sea in a minute?

Answer	B

A. 400000
B. 4000000
C. 40000
D. 4000

19. $(AB)' = ?$

Answer	A

A. B'A'
B. A'B'
C. AB
D. BA

20. The area bounded by the curves y = ln x, y = | ln x| and the y-axis is.

Answer	B

A. 3
B. 2
C. 4
D. 8

21. The number of subsets of a set containing n elements is.

Answer	B

A. n
B. $2^n - 1$
C. n^2
D. 2^n

22. Sum of infinite number of terms in GP is 20 and sum of their square is 100 Sum of infinite number of terms in GP is 20 and sum of their square is 100. The common ratio of GP is

Answer	B

A. $\frac{1}{5}$
B. $\frac{3}{5}$
C. $\frac{8}{5}$
D. 5

Answer : Let terms of GP be a, ar, ar^2 where a = first term,
r = common ratio, $S_\infty = a/1-r$, Therefore, $a/1-r = 20$, $a = 20(1-r)$
Also, $a^2 = 100(1-r)^2$, The correct option is B.

23. If x_1, x_2, x_3 and y_1, y_2, y_3 are both in G.P. with the same common ratio, then the points (x_1, y_1), (x_2, y_2) and (x_3, y_3)

Answer	D

A. lie on an ellipse
B. lie on a circle
C. are vertices of a triangle
D. lie on a straight line.

Solution:

Let $x_1 = a$ ∴ $x_2 = ar$, $x_3 = ar^2$
and $y_1 = b$ ∴ $y_2 = br$, $y_3 = br^2$
Now A(a,b), B(ar, br), C(ar^2, br^2)

Now slope of AB $= \frac{b(1-r)}{a(1-r)} = \frac{b}{a}$ and

Slope of BC $= \frac{br(1-r)}{ar(1-r)} = \frac{b}{a}$
as slope of AB = slope of BC
∴ AB∥ BC, but point B is common so
A, B, C are collinear.

24. In a five number summary, which of the following is not used for data summarization?

Answer	D

A. the smallest value
B. the largest value
C. the median
D. the 25th percentile

25. Since the mode is the most frequently occurring data value, it

Answer	D

A. can never be larger than the mean
B. is always larger than the median
C. is always larger than the mean
D. None of the above answers is correct.

The mean, median and mode values will be distributed according to the skewness of the distribution. Accordingly mode can be greater than or less than mean or mode.

Exhibit 3-1

The following data show the number of hours worked by 200 statistics students.

Number of Hours Frequency
0 -9 40 | 10 -19 50 | 20 -29 70 | 30 -39 40

26. Refer to Exhibit 3-1. The class width for this distribution

Answer	B

A. is 9
B. is 10
C. is 11
D. varies from class to class

27. Sine rule for a triangle states that

Answer	B

A. a/sin A = b/sin B = c/sin C
B. sin A/a = sin B/b = sin C/c
C. a/sin A + b/sin B + c/sin C
D. 2a/sin A = 2b/sin B = 2c/sin C

28. Considering 0° < x < 180°, angle of sin x = 0.2385 is

Answer	D

A. 21° , 170.32°
B. 18.02° , 165.02°
C. 14° , 150°
D. 13.80° , 166.20°

29. In $\triangle$ ABC, angle A = 110° and AC = 2AB. If area of $\triangle$ABC is 15.5 cm² then length of AB is

Answer	C

A. 3.06 cm
B. 6.05 cm
C. 4.06 cm
D. 5.06 cm

30. $^nC_r + ^nC_{r-1} =$
A. $^nC_{r-1}$
B. $^{n+1}C_r$
C. $^{n+1}C_{r-1}$
D. $^{n+1}C_{r+1}$

Answer B

31. The general term in $(x + y)^n$ is given by
A. $T_{r+1} = ^nC_r x^{n-r} y^r$
B. $T_{r+1} = ^nC_r x^{n-r} y^r$
C. $T_{r+1} = ^nC_r x^{n-r} y^r$
D. none of these

Answer C

32. The middle term in expansion of $(x + y)^n$ in case of n being odd is
A. $(n+3)/2$ th
B. $n/2$ th
C. $(n/2 + 1)$ th
D. $\frac{(n+1)th}{2}$ and $\frac{(n+3)th}{2}$

Answer D

33. A girl counted in the following way on the fingers of her left hand : She started by calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5 & then reversed direction calling the ring finger 6, middle finger 7 and so on. She counted upto 1994. She ended counting on which finger ?
A. Thumb
B. Index finger
C. Middle finger
D. Ring finger

Answer B

Explanation: Clearly, while counting, the numbers associated to the thumb will be : 1, 9,17, 25......i.e. numbers of the form (8n + 1).
Since 1994 = 249 x 8 + 2, so 1993 shall correspond to the thumb and 1994 to the index finger.

34. Evaluate permutation equation $^{75}P_2$

Answer D

A. 5200
B. 5300
C. 5450
D. 5550

Explanation: $^nP_r = \frac{n!}{(n-r)!}$

$^{75}P_2 = \frac{75!}{(75-2)!}$

$= \frac{75 \cdot 74 \cdot 73!}{(73)!}$

$= 5550$

35. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men & 3 women?
A. 1
B. 126
C. 63
D. 64

Answer C

Explanation: We need to select 5 men from 7 men and 2 women from 3 women.
Number of ways to do this
$= ^7C_5 \times ^3C_2$
$= ^7C_2 \times ^3C_1 [\because ^nC_r = ^nC_{(n-r)}]$
$\Rightarrow 7 \times 62 \times 1 \times 3 = 21 \times 3 = 63 = 7 \times 62 \times 1 \times 3 = 21 \times 3 = 63$

---

36. Transpose of a row matrix is
A. zero matrix
B. row matrix
C. column matrix
D. diagonal matrix

Answer C

37. If A and B matrices are of same order and A + B = B + A, this law is known as
A. distributive law
B. commutative law
C. associative law
D. cramer's law

Answer B

38. A pair of equations to determine value of 2 variables is called
A. simultaneous linear equations
B. paired equations
C. quadratic equations
D. simple equations

Answer A

39. If a matrix has equal number of columns and rows then it is said to be a
A. row matrix
B. identical matrix
C. square matrix
D. rectangular matrix

Answer C

40. State True or False:
If for a square matrix A and B, null matrix O, AB =O implies BA=O:
A. True
B. False

Answer B

Explanation: Let $A = \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$ AB=O and BA is not equal to O.

41. Let A {a, b, c} and let R = {(a, a)(a, b), (b, a)}. Then, R is
A. reflexive and symmetric but not transitive
B. reflexive and transitive but not symmetric
C. symmetric and transitive but not reflexive
D. an equivalence relation.

Answer C

Explanation: Symmetric and transitive but not reflexive.

42. An implication or conditional "if p then q "is denoted by
A. $p \leftarrow q$
B. $p \wedge q$
C. $p \rightarrow q$
D. $p \vee q$

Answer C

43. Set of real number R is a subset of
A. The set of integers
B. The set of Even integers
C. The set of Natural numbers
D. The set of Complex numbers

Answer D

44. If A = {4n -3n -1: n∈N} and B = {9(n-1): n∈N}, then we have
A. B −A
B. A−B
C. A∩B
D. none of these

Answer B

45. The value of k, if (x − 1) is a factor of $4x^3 + 3x^2 - 4x + k$, is.
A. 1
B. 2
C. −3
D. 3

Answer C

46. _____ bytes are required to encode 2000 bits of data.
A. 1
B. 2
C. 3
D. 8

Answer B

47. $(-7+4\sqrt{-7}-3\sqrt{7})$ is.
A. a positive rational number
B. an irrational number
C. a negative rational number
D. equal to zero

Answer B

48. Palindromic numbers are numbers that read the same backwards as forwards. The world Palindrome comes from the Greek word Palindromes. What is its meaning?
A. Moving
B. Kicking
C. Running back again
D. Laughing

Answer C

49. If the set $G=\{1,w,w^2\}$ is an abelian group w.r.t multiplication, then inverse of w is?
A. 1
B. w
C. w^2
D. it does not contain an inverse

Answer A

50. When two coins are tossed simultaneously, what are the chances of getting at least one tail?
A. $\frac{3}{4}$
B. $\frac{1}{5}$
C. $\frac{4}{5}$
D. $\frac{1}{4}$

Answer A

Explanation: At least one tails means one tails or both tails.
Let us see what the possible outcomes are when two coins are tossed simultaneously
We can get,
1. Heads & Heads, 2. Heads & Tails, 3. Tails & Heads, 4. Tails & Tails
So we have Total = 4 outcomes
Out of them, 3 have tails in it.
Chances of at least 1 tails = $\frac{3}{4}$

Probability = $\frac{\text{What we want}}{\text{Total}}$

OR = add   AND = multiply

MOCK TEST - 7
PHYSICS MOCK TEST   Marks: 50

51. A geo-stationary satellite orbiting around Earth is used for
A. national communication
B. national conferencing
C. international conferencing
D. international communication

Answer D

52. A 500 kg car takes a round turn of radius 50 m with a velocity of 36 km/hr. The centripetal force is.
A. 250 N
B. 750 N
C. 1000 N
D. 1200 N

Answer C

53. An achromatic combination of lenses is formed by joining
A. 2 convex lenses
B. 2 concave lenses
C. 1 convex and 1 concave lens
D. 1 convex and 1 plane mirror

Answer C

54. The rise in the level of a liquid in a tube is h. What will be the rise in the level if the same amount of liquid is poured into a tube of half the diameter.
A. 0
B. h/2
C. h
D. 2h

Answer D

Solution: $h = \frac{4S\cos\theta}{\rho dg}$

where h = rise in liquid height in the tube, S = surface tension, θ = the angle of contact, d = diameter of the tube, ρ = density of liquid and g = acceleration due to gravity. All other factors remaining constant, h   d. Thus, if d is halved, h will be doubled.

55. The potentials of the two plates of capacitor are +10V and -10 V. The charge on one of the plates is 40 C. The capacitance of the capacitor is.
A. 2F
B. 4F
C. 0.5F
D. 0.25F

Answer A

Solution: Common Potential $-V = \frac{\text{Total charge}}{\text{Total capacity}} = \frac{Q_1 + Q_2}{C_1 + C_2}$ $V = \frac{C_1V_1 + C_2V_2}{C_1 + C_2}$

The potential difference across the parallel plate capacitor is 10V-(-10V)=20 V
Capacitance = Q/V = 40/20 = 2F

56. Sir C.V. Raman was awarded Nobel Prize for his work connected with which of the following phenomenon of radiation?
A. Scattering
B. Diffraction
C. Interference
D. Polarization

Answer A

57. The force required to separate two glass plates of are 10^{-2} m² with a film of water 0.05 mm thick between them is (surface tension of water is 70×10^{-3} N/m)

A. 28 N
B. 14 N
C. 50 N
D. 38 N

Answer A

$F = (2AT/d)$ $A = area = 10^{-2}$ m²
$T = $ surface tension $= 70 \times 10^{-3}$ N/m
$d = $ thickness of water film between plates $= 0.05 \times 10^{-3}$ m
Hence $F = \{(2 \times 10^{-2} \times 70 \times 10^{-3})/(0.05 \times 10^{-3})\} = 28$ N

58. How is charge carriers produced in intrinsic semiconductors?
A. By pure atoms
B. By electrons
C. By impure atoms
D. By holes

Answer C

Explanation: Impure semiconductors in which the charge carriers are produced due to impurity atoms are called extrinsic semiconductors. They are obtained by doping an intrinsic semiconductor with impurity atoms.

59. What type of material is obtained when intrinsic semiconductor is doped with pentavalent impurity?
A. N –type semiconductor
B. Extrinsic semiconductor
C. P –type semiconductor
D. Insulator

Answer A

Explanation: N –type semiconductor is obtained by doping an intrinsic semiconductor with pentavalent impurity atoms.

60. The lens formula is _____.
A. $1/f = 1/u + 1/v$
B. $1/f = 1/u - 1/v$
C. $1/f = 1/v - 1/u$
D. $1/f + 1/v = u$

Answer B

61. 1 diopter = _____.
A. 1 m
B. 1 m$^{(-1)}$
C. 1 cm
D. 1 cm$^{(-1)}$

Answer D

62. Which of the following is a true statement?
A. The power of a lens is always positive.
B. The power of a lens is always negative.
C. The power of a convex lens is positive.
D. The power of a concave lens is positive.

Answer C

63. The image formed by a concave mirror is real, inverted and of the same size as that of the object. The position of the object should be _____.
A. beyond the center of curvature of mirror
B. between the center of curvature and the focus
C. at the center of curvature of the mirror
D. at the focus

Answer C

64. Find the length of a conductor which is moving with a velocity 0.4m/s in a magnetic field of 8T, inducing an emf of 20V.
A. 50m
B. 5m
C. 0.5m
D. 6.25m

Answer D

Explanation: The formula for induced emf is: emf=Blv. Substituting the values of B, emf & v from the question, we get I=6.25m.

65. In a capacitive circuit
A. a steady value of applied voltage causes discharge
B. an increase in applied voltage makes a capacitor charge
C. decrease in applied voltage makes a capacitor charge
D. none of the above

Answer B

66. Capacitance increases with
A. increase in plate area and decrease in distance between the plates
B. increase in plate area and distance between the plates
C. decrease in plate area and value of applied voltage
D. reduction in plate area and distance between the plates

Answer A

67. A capacitor consists of
A. two insulators separated by a conductor
B. two conductors separated by an insulator
C. two insulators only
D. two conductors only

Answer B

68. What happens to the current in a coil while accelerating a magnet inside it?
A. Increases
B. Decreases
C. Remains constant
D. Reverses

Answer A

Explanation: A chance in magnetic field induces an emf. When there is an emf, there has to be a current. Hence, when the magnet is moved inside a coil, the current in it increases.

69. What is the consequence of motor effect?
A. Current
B. Voltage
C. Electromagnetic induction
D. EMF

Answer C

Explanation: Motor effect is when a current carrying conductor in a magnetic field experiences a force, hence its consequence is electromagnetic induction.

70. Which of the following heat flow situations pertains to free or natural convection?
A. Air conditioning installations and nuclear reactors
B. Flow of water inside the condenser tubes
C. Cooling of internal combustion engine
D. Cooling of billets in atmosphere

Answer D

Explanation: Cooling of billets in atmosphere is both free and natural convection.

71. For an ideal black body
A. absorptivity = 1
B. reflectivity = 1
C. emissivity = 0
D. transmissivity = 1

Answer A

72. Which of the following is generally considered as opaque surface towards radiations?
A. Gases
B. Solids
C. Liquids
D. Both (b) and (c)

Answer D

73. With increase in porosity, the thermal conductivity of a solid substance
A. increases
B. decreases
C. remains unchanged
D. may increase or decrease; depends on the solid

Answer B

74. When a gas filled in a cylinder fitted with a movable piston is allowed to expand, the work done by the gas is positive. True or false?

A. True
B. False

Answer A

Explanation: When a gas filled win a cylinder fitted with movable piston is allowed to expand, the work done by the gas is positive, because the force due to gas pressure and displacement act in the same direction.

75. When a body slides against a rough horizontal surface, the work done by friction is

A. Positive
B. Zero
C. Negative
D. Constant

Answer C

Explanation: If a force acting on a body has a component in the opposite direction of displacement, the work done is negative, when a body slides against a rough horizontal surface, its displacement is opposite to that of the force of friction. He work done by the friction is negative.

76. When a body is lifted, the work done by the gravitational force is positive. True or false?

A. True
B. False

Answer B

Explanation: When a body is lifted, the work done by the gravitational force is negative. This is because the gravitational force acts vertically downwards while the displacement is in vertically upward direction.

77. The vector product of any vector with itself is.

A. equal to 1
B. greater than 1
C. less than 1
D. equal to 0

Answer D

78. What is the unit of luminous flux ?

A. Candela
B. Lumen
C. Lux
D. Footcandle

Answer B

79. All of the waves listed below are a part of the electromagnetic spectrum except

A. sound waves.
B. X rays.
C. gamma rays.
D. light waves.

Answer A

80. Addition of trivalent impurity to a semiconductor creates many .

A. Holes
B. Free electrons
C. Valence electrons
D. Bound electrons

Answer A

81. As the doping to a pure semiconductor increases, the bulk resistance of the A.

A. semiconductor.
B. Remains the same
C. Increases
D. Decreases

Answer C

82. Which of the following AC. motors is usually used in large motor-generator sets?

A. Synchronous motor
B. Squirrel cage induction motor
C. Slip ring induction motor
D. Any of the above

Answer A

83. The depletion mode of MOSFET resemble semantically in the behaviour of JFET due to copious increase in

A. negative gate voltage by reducing its conductivity level
B. negative gate voltage by enhancing its conductivity level
C. negative source voltage by reducing its conductivity level
D. negative source voltage by enhancing its conductivity level

Answer A

84. The coefficient of restitution always applies.

A. to only one of the colliding objects
B. to neither of the colliding objects
C. jointly to the colliding objects
D. to the bigger colliding object

Answer C

85. If charge stored on plates of capacitor is large, then capacitance will be.

A. small
B. large
C. zero
D. infinite

Answer B

86. A paramagnetic sample shows a net magnetisation of 8 Am when placed in an eternal magnetic field of 0.6T at a temperature of 4K. When the same sample is placed in an external magnetic field of 0.2 T at a temperature of 16 K, the magnetisation will be.

A. (32/3) Am
B. (2/3)Am
C. 6 Am
D. 2.4 Am

Answer B

87. "If no net force acts on it, an object at rest will remain at rest & an object in motion will remain in motion at constant velocity". This statement is the.

A. first law of motion
B. second law of motion
C. third law of motion
D. d'Alembert's principle

Answer A

88. A dip needle lies initially in the magnetic meridian when it shows an angle of dip ? at a place. The dip circle is rotated through an angle x in the horizontal plane and then it shows an angle of dip θ'. Then $\frac{\tan\theta'}{\tan\theta}$ is:

A. 1/cos x
B. 1/sin x
C. 1/tan x
D. cos x

Answer A

90. A synchronous converter can be started.

A. by means of a small auxiliary motor
B. from AC. side as induction motor
C. from D.C. side as D.C. motor
D. any of the above methods

Answer D

91. What is the unit of potential difference ?

A. Watt
B. Coulomb
C. Volt
D. Weber

Answer C

92. Which of the following is equivalent to the unit "farad" ?

A. coulomb/volt
B. joule/volt
C. joule/coulomb
D. coulomb/joule

Answer A

93. Liquids

A. cannot be compressed
B. occupy definite volume
C. are not affected by change in pressure and temperature
D none of the above.

Answer D

94. Displacement is a.

A. Scalar quantity
B. Vector quantity
C. Base quantity
D. Derived quantity

Answer B

95. A simple pendulum has a time period T. The pendulum is completely immersed in a non-viscous liquid, whose density is 1/10th of that of the material of the bob. The time period of the pendulum is immersed in the liquid is

A. T
B. T/10
C. $\sqrt{(9/10)}$ T
D. $\sqrt{T}$

Answer D

96. _____ is a device that converts electrons to photons or vice-versa.
A. Antenna
B. Electron gun
C. Photon amplifier
D. Microwave tube

Answer A

97. Capacitor preferred when there is high frequency in the circuits is.
A. Electrolyte capacitor
B. Mica capacitor
C. Air capacitor
D. Glass capacitor

Answer B

98. The method which can be used for absolute measurement of resistance
A. Ohm's law method
B. Wheatstone bridge method
C. Raleigh method
D. Lorentz method

Answer D

99. The battery connections required to forward bias a pn junction are ......
A. +ve terminal to p and –ve terminal to n
B. –ve terminal to p and +ve terminal to n
C. –ve terminal to p and –ve terminal to n
D. None of the above

Answer A

100. The solid area through which all the power radiated by the antenna is.
A. Beam area
B. Effective area
C. Aperture area
D. Beam efficiency

Answer A

MOCK TEST - 7
CHEMISTRY MOCK TEST   Marks: 20

101. Elements that show the properties of both metals and non metals are called?
A. metalloids
B. allotropes
C. alloys
D. colloids

Answer A

102. Kimberley Process" is related to which among the following ?
A. Gold
B. Diamonds
C. Semi Precious Stones
D. Aluminium .

Answer B

103. Which among the following is an organic mineral?
A. Amber
B. Hornblende
C. Angite
D. Analcime

Answer A

104. What happens to the weight of Iron, when it rusts?
A. Increases for long time
B. Decreases then increases
C. Increases then decreases
D. Remains the same

Answer C

105. What is a mixture of potassium nitrate powdered charcoal and sulphur called?
A. paint
B. aluminium
C. brass
D. gun powder

Answer D

106. The first metal to be used by man was.
A. Aluminum
B. copper
C. Iron
D. Silver

Answer B

107. Adsorption is used commonly in which of the following processes?
A. Purification of solids
B. Purification of liquids
C. Making scrubbers
D. Chromatography

Answer D

108. Consider the following statements:
1. Copernicium is at present highest-numbered element recognized by IUPAC
2. Copernicum has been synthesized in the lab by a nuclear reaction of Zinc & Lead Isotopes
Which among the above statements is / are correct?
A. Only 1 is correct
B. Only 2 is correct
C. Both 1 & 2 are correct
D. Neither 1 nor 2 are correct

Answer C

109. Brass is an alloy of?
A. Copper and Tin
B. Copper and Zinc
C. Copper and Aluminium
D. Iron and Copper

Answer B

110. Which of the following units is useful in relating concentration of solution with its vapour pressure?
A. mole fraction
B. parts per million
C. mass percentage
D. molality

Answer A

111. Which of the following is produced during the formation of photochemical smog?
A. Nitrogen Oxides
B. Hydrocarbons
C. Methane
D. Ozone

Answer D

112. What is Carbamide?
A. A Pesticide
B. A Fertilizer
C. A Textile Dye
D. An Explosive

Answer B

113. Which among the following would cause the bright red colur due to bursting of crackers?
A. Strontium
B. Sodium
C. Suphur
D. Magnesium

Answer A

114. Duralumin which is used in making aero planes is an alloy consisting of ?
A. Aluminum & Copper
B. Aluminum, Copper & Manganese
C. Aluminum, Copper, Manganese & Magnesium
D. Aluminum and zinc

Answer C

115. Calamine is an ore of which among the following?
A. Zinc
B. Copper
C. Mercury
D. Iron

Answer A

116. Chemically rust is
A. hydrated ferrous oxide
B. only ferric oxide
C. hydrated ferric oxide
D. none of these

Answer C

117. Which of the following can be used for the denaturation of ethyl alcohol?
A. Methyl alcohol
B. Pyridines
C. Copper sulphate
D. All of above

Answer D

118. The most electropositive element is
A. Hydrogen
B. Magnesium
C. Calcium
D. Silicon

Answer C

119. The main active constituent of tea and coffee is
A. nicotine
B. chlorophyll
C. caffeine
D. aspirin

Answer C

120. The material which can be deformed permanently by heat and pressure is called a
A. thermoplastic
B. thermoset
C. chemical compound
D. polymer

Answer B

Change of Voice:

121. He asked me what my post was.
A. I get asked what my post was.
B. I could asked what my post was.
C. I was asked what my post was.
D. I had asked what my post was.

Answer C

122. I asked Susheela why she was sad.
A. Susheela was asked by me that why she was sad.
B. Susheela was asked by me why she was sad.
C. Susheela was asked that why she was sad.
D. Susheela was asked why she was sad.

Answer D

123. His hard work satisfied me.
A. I was satisfied for his hard work.
B. I was satisfied by his hard work.
C. I was satisfied with his hard work.
D. I was satisfied at his hard work.

Answer C

Direction: Each of the following sentences is followed by four words or group of words. Fill in the blanks with the appropriate word or group of words.

124. The treasure was hidden_____ a big shore.
A. on
B. underneath
C. toward
D. off

Answer D

Explanation : The treasure was hidden off the shore. When something is hidden off the shore, it just means that its hidden somewhere near it.

125. The human mind seems to have built-in_____ against original thought.
A. prejudices
B. ideas
C. interests
D. safeguards

Answer A

126. A child is the future of a family____ nation.
A. just as
B. as a
C. like a
D. as well as of a

Answer D

127. If strict security measures were taken, the tragedy might have been _____.
A. restrained
B. averted
C. removed
D. controlled

Answer B

Comprehension:
Sometimes we went off the road and on a path through the pine forest. The floor of the forest was soft to walk on; the frost did not happen it as it did the road. But we did not mind the hardness of the road because we had nails in the soles and heels nails bit on the frozen ruts and with nailed boots it was good walking on the road and invigorating. It was lovely walking in the woods.

128. 'Frozen ruts' means
A. very cold roads
B. wheel marks in which frost had become hard
C. the road covered with frost
D. hard roads covered with snow

Answer | C

129. The floor of the forest was soft because
A. the forest did not harden it on account of trees
B. the travellers were wearing boots
C. the shoes had nails on their sole and heel
D. they enjoyed walking in the woods

Answer | A

130. We did not mind the hardness of road because
A. we had nailed boots on
B. it was good walking on the road
C. the walk was refreshing
D. the nails bit on the frozen roads

Answer | A

131. We found great joy on account of
A. wearing nailed boots
B. the good long walk on the road
C. walking occasionally through the forest
D. walking on frost with nailed boots on

Answer | D

132. Sometimes we walked through the pine forest as
A. the path was unaffected by the frost
B. it was good walking with nails in the boots
C. the walks was invigorating
D. it was sheer joy to walk in the forest

Answer | A

Directions to Solve Synonymn.
In the following the questions choose the word which best expresses the meaning of the given word.

133. UNCOUTH
A. Ungraceful   B. Rough
C. Slovenly   D. Dirty

Answer | B

134. ERROR
A. Misadventure   B. Misgiving
C. Ambiguity   D. Blunder

Answer | D

135. COMMENSURATE
A. Measurable   B. Proportionate
C. Begining   D. Appropriate

Answer | B

136. DEBACLE
A. Collapse   B. Decline
C. Defeat   D. Disgrace

Answer | A

Directions to Solve : Antonyms
In the following questions choose the word which is the exact OPPOSITE of the given words.

137. REVEALED
A. Denied   B. Concealed
C. Ignored   D. Overlooked

Answer | B

138. ESSENTIAL
A. Extra   B. Noughts
C. Minors   D. Trivial

Answer | A

139. HYPOCRITICAL
A. Gentle   B. Sincere
C. Amiable   D. Dependable

Answer | B

140. FICKLE
A. Courageous   B. Sincere
C. Steadfast   D. Humble

Answer | C

Directions to Solve:
In the questions below the sentences given are Direct/Indirect speech. From the given alternatives, choose the one which best expresses the given sentence in Indirect/Direct speech.

141. "Are you alone, my son?" asked a soft voice close behind me.
A. A soft voice asked that what I was doing there alone.
B. A soft voice said to me are you alone son.
C. A soft voice from my back asked If I was alone.
D. A soft voice behind me asked If I was alone.

Answer | D

142. She said to him, "Why don't you go today?"
A. She asked him why he did not go that day.
B. She said to him why he don't go that day.
C. She asked him not to go that day.
D. She asked him why he did not go today.

Answer | A

143. He exclaimed with joy that India had won the Sahara Cup.
A. He said, "India has won the Sahara Cup"
B. He said, "India won the Sahara Cup"
C. He said, "How! India will win the Sahara Cup"
D. He said, "Hurrah! India has won the Sahara Cup"

Answer | D

144. The little girl said to her mother, "Did the sun rise in the East?"
A. The little girl said to her mother that the sun rose in the East.
B. The little girl asked her mother if the sun rose in the East.
C. The little girl said to her mother if the sun rises in the East.
D. The little girl asked her mother if the sun is in the East.

Answer | B

Directions to Solve:
In the questions below the sentences have been given in Active/Passive voice. From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.

145. After driving professor Kumar to the museum she dropped him at his hotel.
A. After being driven to the museum, Professor Kumar was dropped at his hotel.
B. Professor Kumar was being driven dropped at his hotel.
C. After she had driven Professor Kumar to the museum she had dropped him at his hotel.
D. After she was driven Professor Kumar to the museum she had dropped him at his hotel.

Answer A

146. Darjeeling grows tea.
A. Tea is being grown in Darjeeling.
B. Let the tea be grown in Darjeeling.
C. Tea is grown in Darjeeling.
D. Tea grows in Darjeeling.

Answer C

147. They have built a perfect dam across the river.
A. Across the river a perfect dam was built.
B. A perfect dam has been built by them across the river.
C. A perfect dam should have been built by them.
D. Across the river was a perfect dam.

Answer B

148. Do you imitate others?
A. Are others being imitated by you?
B. Are others imitated by you?
C. Have others being imitated by you?
D. Were others being imitated by you?

Answer B

Spelling Correction

149.
A. Barbarien   B. Barberien
C. Barberian   D. Barbarian

Answer A

150.
A. Battallion   B. Bettalion
C. Battalion   D. Battalean

Answer C

151.
A. Bibliography   B. Bebliography
C. Bebeography   D. Bibeographe

Answer A

152.
A. Brethren   B. Brrethren
C. Brethran   D. Brathren

Answer A

Directions to Solve : -
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

153. The master
P : who was very loyal to him
Q : punished the servant
R : without giving any valid reason
S : when he left the work unfinished
   The Proper sequence should be:
A. RQPS   B. RQSP
C. QPSR   D. QRPS

Answer C

154. All such students
P : get success   Q : who are honest and hard-working
R : and recognition S : in very walk of life The Proper sequence should be:
A. SPRQ   B. PRQS
C. QPRS   D. PSRQ

Answer C

155. It was
P : in keeping with my mood
Q : a soft summer evening
R : as I walked sedately
S : in the direction of new house The Proper sequence should be:
A. SRPQ   B. QRPS
C. QPRS   D. SQPR

Answer C

156. I don't remember
P : I saw a man dying in front of a hospital
Q : but when I left lucknow in 1984 R : hit apparently by a fast moving car
S : the exact date
The Proper sequence should be:
A. SQRP   B. SQPR
C. QRPS   D. SPRQ

Answer B

Error Detection

157.
A. In order to save petrol   B. motorists must have to
C. be very cautious   D. while driving along the highways

Answer B

Explanation: In order to save petrol motorists have to be very cautious while driving along the highways.

158.
A. Despite of   B. his repeated requests
C. the teacher   D. beat him for his mistake.

Answer B

Explanation : Despite his repeated requests the teacher beat him for his mistake.

159.
A. Consider his young age   B. the achievement of the player
C. is really admirable.   D. No Error

Answer A

Explanation : Considering his young age the achievement of the player is really admirable.

160..
A. Neither of the plans   B. suits him and therefore
C. he decided not to   D. go out yesterday.

Answer B

Explanation: Neither of the plans suited him and therefore he decided not to go out yesterday.

MOCK TEST - 7

APTITUDE MOCK TEST   Marks: 40

161. The angle between the minute hand and the hour hand of a clock when the time is 4.20, is.
A. 0°
B. 10°
C. 5°
D. 20°

Answer B

162. If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is.
A. 50 km
B. 56 km
C. 70 km
D. 80 km

Answer A

163. A farmer travelled a distance of 61 km in 9 hours. He travelled partly on foot @ 4 km/hr and partly on bicycle @ 9 km/hr. The distance travelled on foot is.
A. 14 km
B. 15 km
C. 16 km
D. 17 km

Answer C

164. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw?
A. 32
B. 48
C. 64
D. 96

Answer C

165. In how many ways can the letters of the word 'LEADER' be arranged?
A. 72
B. 144
C. 360
D. 720

Answer C

166. In how many different ways can the letters of the word 'MATHEMATICS' be arranged so that the vowels always come together?
A. 10080
B. 4989600
C. 120960
D. None of these

Answer C

167. Two cards are drawn together from a pack of 52 cards. The probability that one is a spade and one is a heart, is.
A. $\frac{3}{20}$
B. $\frac{29}{34}$
C. $\frac{47}{100}$
D. $\frac{13}{102}$

Answer D

168. Select the alternative in which the specified components of the key figure (X) are found.
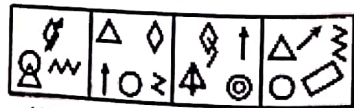
(X)

(1)   (2)   (3)   (4)

A. 1
B. 2
C. 3
D. 4

Answer A

169. Arrange the following words as per order in the dictionary.
1. Ambitions
2. Ambiguous
3. Ambiguity
4. Animation
5. Animal
A. 3,2,4,1,5
B. 3,2,5,4,1
C. 3,2,1,5,4
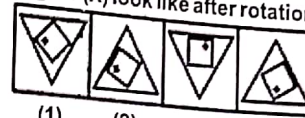D. 3,2,4,5,1

Answer C

170. Find out how will the key figure (X) look like after rotation.

(X)   (1)   (2)   (3)   (4)

A. 1
B. 2
C. 3
D. 4

Answer B

171. From a pack of 52 cards, 1 card is drawn at random. Find the probability of a face card drawn.
A. 3/13
B. 1/52
C. 1/4
D. None of above

Answer A

172. What least number must be added to 1056, so that the sum is completely divisible by 23?
A. 21
B. 3
C. 2
D. 18

Answer C

173. If the given words are arranged in descending order, then which of the following be last?
A. Sapling
B. Plant
C. Seed
D. Tree

Answer C

174. Complete the series 20, 19, 17, ..., 10, 5.
A. 15
B. 16
C. 13
D. 14

Answer D

175. Which word does NOT belong with the others?
A. street
B. freeway
C. interstate
D. expressway

Answer D

176. How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 & 9, which are divisible by 5 and none of the digits is repeated?
A. 5
B. 10
C. 15
D. 20

Answer D

177. Three unbiased coins are tossed, what is the probability of getting at least 2 tails ?
A. 1/3
B. 1/6
C. 1/2
D. 1/8

Answer C

178. Artist is to painting as senator is to.
A. attorney
B. law
C. politician
D. constituents

Answer A

151

179. How much does a watch lose per day, if its hands coincide every 64 minutes?

A. $32\frac{8}{11}$ min.

B. $36\frac{5}{11}$ min.

C. 90 min.

D. 96 min.

Answer A

180. A man covered a certain distance at some speed. Had he moved 3 kmph faster, he would have taken 40 minutes less. If he had moved 2 kmph slower, he would have taken 40 minutes more. The distance (in km) is:

A. 35

B. $36\frac{2}{3}$

C. $37\frac{1}{2}$

D. 40

Answer D

181. Exercise is to gym as eating is to.

A. food

B. dieting

C. fitness

D. restaurant

Answer D

182. In a throw of coin what is the probability of getting head.

A. 1

B. 2

C. 1/2

D. 0

Answer C

183. A school has only four classes that contain 10, 20, 30 and 40 students respectively. The pass percentage of these classes are 20%, 30%, 60% and 100% respectively. Find the pass % of the entire school.

A. 56%

B. 76%

C. 34%

D. 66%

Answer D

184. Look at this series: 22, 21, 23, 22, 24, 23, ... What number should come next?

A. 22

B. 24

C. 25

D. 26

Answer C

185. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

A. 1

B. 2

C. 3

D. 4

Answer C

186. Pipe A can fill a tank in 5 hours, pipe B in 10 hours and pipe C in 30 hours. If all the pipes are open, in how many hours will the tank be filled ?

A. 2.5 hours

B. 2 hours

C. 3.5 hours

D. 3 hours

Answer C

187. M is older than R. Q is younger than R and N. N is not as old as M. Who among M, N, R and Q is the oldest ?

A. M

B. R

C. M or R

D. Q

Answer A

188. What will be the fraction of 20%

A. $\frac{1}{4}$

B. $\frac{1}{5}$

C. $\frac{1}{10}$

D. None of above

Answer B

189. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

A. $\frac{3}{4}$

B. $\frac{4}{7}$

C. $\frac{1}{8}$

D. $\frac{3}{7}$

Answer B

190. If water is called black, black is called tree, tree is called blue, blue is called rain certain language, rain is called pink and pink is called fist in a what is the colour of the sky called in that language ?

A. Blue

B. Fish

C. Rain

D. Pink

Answer C

191. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures: Answer Figures:

(A) (B) (C) (D) (E)   (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3
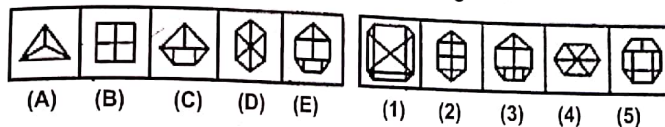
D. 4

E. 5

Answer E

192. A housewife saved Rs. 2.50 in buying an item on sale. If she spent Rs. 25 for the item, approximately how much percent she saved in the transaction.

A. 9%

B. 10%

C. 11%

D. 12%

Answer A

193. A and B can together complete a piece of work in 4 days. If A alone can complete the same work in 12 days, in how many days can B alone complete that work?

A. 4 days

B. 5 days

C. 6 days

D. 7 days

Answer C

194. In one hour, a boat goes 11km along the stream and 5 km against it. Find the speed of the boat in still water.

A. 6

B. 7

C. 8

D. 9

Answer C

195. A sum of money invested at compound interest to Rs. 800 in 3 years & to Rs 840 in 4 years. The rate on interest per annum is.

A. 4%

B. 5%

C. 6%

D. 7%

Answer B

153

196. At what time between 4 and 5 o'clock will the hands of a clock be at right angle?

A. at $\frac{32}{11}$ min. past 4.

B. at $\frac{32}{11}$ min. past 4.

C. at $\frac{35}{11}$ min. past 4.

D. at $\frac{40}{11}$ min. past 4.

Answer | D

197. Total number of boys and girls in a school is 150. If the number of boys is x, then girls become x% of the total number of students. The number of boys is
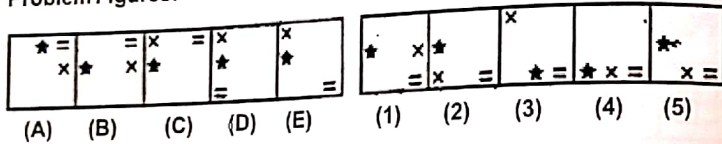
A. 50
B. 60
C. 70
D. 80

Answer | B

198. A is three times as old as B. C was twice-as old as A four years ago. In four years' time, A will be 31. What are the present ages of B and C ?

A. 9, 46
B. 9, 50
C. 10, 46
D. 10, 50

Answer | B

199. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures:

Answer Figures:

(A) (B) (C) (D) (E)   (1) (2) (3) (4) (5)

A. 1
B. 2
C. 3
D. 4
E. 5

Answer | E

200. Simplify: $\dfrac{0.72 \times 0.72 \times 0.72 - 0.39 \times 0.39 \times 0.39}{0.72 \times 0.72 + 0.72 \times 0.39 + 0.39 \times 0.39}$

A. 0.333
B. 0.33
C. 0.3333
D. 0.3334

Answer | B

Explanation: Let, a = 0.72 and b = 0.39
So the expression can be written as

$\dfrac{a^2 - b^2}{a^2 + ab + b^2}$

Tip : Standard Formula = $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

∵ The expression can be written as

∵ a −b=0.72−0.39= **0.33**

$\dfrac{(a - b)(a^2 + ab + b^2)}{a^2 + ab + b^2} = a\text{-}b$

MOCK TEST - 8
MATHS MOCK TEST

Marks: 50

1. If the manufacturer gains 10 %, the wholesale dealer 15 % and the retailer 25 %, then find the cost of production of a table if the retail price was Rs 1265.

A. Rs. 750
B. Rs. 800
C. Rs. 850
D. Rs. 900

Answer | B

2. A dog takes 3 leaps for every 5 leaps of a hare. If one leap of the dog is equal to 3 leaps of the hare, the ratio of the speed of the dog to that of the hare is.

A. 4:5
B. 9:5
C. 8:5
D. 9:2

Answer | B

3. 14. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there.

A. 109
B. 128
C. 138
D. 209

Answer | D

4. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit.

A. 70%
B. 80%
C. 90%
D. None of above

Answer | A

5. From a pack of 52 cards, 1 card is drawn at random. Find the probability of a face card drawn.

A. 3/13
B. 1/52
C. 1/4
D. None of above

Answer | A

6. If n is a non negative integer, then $a^n x^n + \ldots + a_1 x + a_0$ is a

A. polynomial of degree 2
B. polynomial of degree 0
C. polynomial of degree 3
D. polynomial of degree n

Answer | D

7. Sum and product of roots of equation $x^2 - kx + k^2 = 0$ are

A. k, k^2
B. k^2, k
C. −k, k^2
D. k, −k^2

Answer | A

8. If one of the factor of $x^2 + x - 20$ is (x + 5). Find the other

A. x−4
B. x+2
C. x+4
D. x−5

Answer | A

9. In a right angle triangle ABC, if AB = x, BC = y, AC = 19 and angle of A is 32.4° then values of x and y respectively are

A. 16.04, 10.17
B. 14.04, 11.17
C. 9.04, 12.17
D. 13.04, 13.17

Answer | A

10. A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?

A. 2.4 km
B. 2.5 km
C. 3 km
D. 3.6 km

Answer A

11. The sum of the three numbers in A.P is 21 and the product of the first and third number of the sequence is 45. What are the three numbers?

A. 5, 7, and 9
B. 9, 7, and 5
C. 3, 7, and 11
D. Both (1) and (2)

Answer D

12. As per properties of real numbers with respect to addition, $(a + b) c + = a + (b + c)$ and $\forall a, b, c \in R$ is

A. closure property
B. associative property
C. additive inverse
D. commutative property

Answer B

13. The difference between the local value and the face value of 7 in the numeral 32675149 is

A. 75142
B. 64851
C. 5149
D. 69993

Answer D

14. A boat takes 90 minutes less to travel 36 miles downstream than to travel the same distance upstream. If the speed of the boat in still water is 10 mph, the speed of the stream is:

A. 2 mph
B. 2.5 mph
C. 3 mph
D. 4 mph

Answer A

15. At what rate of compound interest per annum will a sum of Rs. 1200 become Rs. 1348.32 in 2 years.

A. 3%
B. 4%
C. 5%
D. 6%

Answer D

16. A toy leaves the earth at a point A and rises vertically at uniform speed. After two minutes of vertical rise boy finds the angular elevation of the balloon as 60°. If the point at which boy is standing is 150 m away from point A, what is the speed of the toy?

A. .98 meter/second
B. 1.08 meter/second
C. 1.16 meter/second
D. 2.16 meter/second

Answer D

17. Consider a right angle triangle XYZ, XY is 17 and XZ is supposed as unknown number 'a' then X 54.26° up to three significant figures is

A. 25.1
B. 26.1
C. 27.1
D. 29.1

Answer B

18. The number of zeros of $x^2 + 4x + 2$

A. 1
B. 2
C. 3
D. none of these

Answer D

19. Tool which is used to make indirect measurements of height and distance is called.

A. comparative geology
B. trigonometry
C. geometry
D. none of the above

Answer B

20. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

A. 159
B. 212
C. 201
D. 209

Answer D

21. An arrangement of finite numbers of objects taken some or all at a time is called their.

A. A.P
B. Combination
C. Sequence
D. permutation

Answer D

22. Sum and product of roots of equation $4x^2 + 7x - 3 = 0$ are

A. −3/4, −7/4
B. −7/4, −3/4
C. −7/4, 3/4
D. None of Above

Answer B

23. What comes next in the sequence: 1, 2, 6, 22, ___ ?

A. 82
B. 84
C. 86
D. 88

Answer C

24. What is the sum of the first 100 natural numbers?

A. 5,000
B. 5,025
C. 5,050
D. 5,100

Answer C

25. The famous Bakhshali manuscript was written in ___ script.

A. Devnagri
B. Sanskrit
C. Sarada
D. Brabmi

Answer C

26. What comes next in the sequence: 2, 4, 10, 28, ___ ?

A. 64
B. 70
C. 76
D. 82

Answer D

27. what is the 11th term of the sequence: 1, 3, 9, 27, ... ?

A. 28
B. 210
C. 38
D. 310

Answer D

28. The multiplicative identity of a complex number is ?

A. (0,0)
B. (1,0)
C. (0,1)
D. (1,1)

Answer B

29. 0! = ?

A. 0
B. 1
C. 10
D. undefined

Answer B

30. If total sum of square is 20 and sample variance is 5 then total numbers of observations are.

A. 15
B. 25
C. 4
D. 35

Answer C

31. What is XLII in Arabic Numerals?

A. 42
B. 52
C. 62
D. 12

Answer A

32. If the order of matrix A is m×p. And the order of B is p×n.
    Then the order of matrix AB is ?

    A. n×p
    B. m×n
    C. n×p
    D. n×m

    Answer B

33. Raju age after 15 years will be 5 times his age 5 years back, What is the present age of Raju.

    A. 15
    B. 14
    C. 10
    D. 8

    Answer C

34. Integers are represented by .

    A. W
    B. Z
    C. N
    D. Q

    Answer B

35. Two matrices A and B are added if.
    A. no of rows of A is equal to no of columns of B
    B. no of columns of A is equal to columns of B
    C. both have same order
    D. both are rectangular

    Answer C

36. How many words can be formed from the letters of the word "AFTER", so that the vowels never comes together.

    A. 48
    B. 52
    C. 72
    D. 120

    Answer C

37. Simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum.
    The sum placed on simple interest is.

    A. Rs 1650
    B. Rs 1750
    C. Rs 1850
    D. Rs 1950

    Answer B

38. The smallest 3 digit prime number is.

    A. 101
    B. 103
    C. 109
    D. 113

    Answer A

39. Let R = {(3, 3), (6, 6), (9, 9), (3,6), (3, 9), (9, 12), (3,12), (6, 12), (12, 12)},
    be a relation on the set

    A. reflexive only
    B. reflexive and transitive only
    C. reflexive and symmetric only
    D. an equivalence relation

    Answer B

    Explanation: reflexive and transitive only

40. {x|x ε N, x < 10} is the

    A. Tabular method
    B. Set builder notation
    C. Descriptive method.
    D. Non descriptive method

    Answer B

41. If $z_1 = 2 + i$, $z_2 = 1 + 3i$, then $i\mathrm{Re}(z_1 - z_2)$

    A. 1
    B. i
    C. 2 i
    D. 2

    Answer B

42. The least value of |a| for which tan q and cot q are the roots of the equation $x^2 + ax + b = 0$ is

    A. 2
    B. 1
    C. 1/2
    D. 0

    Answer A

43. Let R be a relation "(x -y) is divisible by m", where x, y, m are integers and m > 1, then R is

    A. partial order
    B. equivalence relation
    C. symmetric but not transitive
    D. anti symmetric and not transitive

    Answer B

44. The value of $L^{1/2}.L^{5/2}LL$ is.

    A. 1
    B. 2
    C. 3
    D. 0.5

    Answer A

45. "n/m" means that n is a factor of m, then the relation T is

    A. relexive, transitive and not symmetric
    B. relexive, transitive and symmetric
    C. transitive and symmetric
    D. relexive and symmetric

    Answer A

46. If p, q, r ∈ R and the quadratic equation $px^2 + qx + r = 0$ has no real root, then

    A. p(p + q + r) < 0
    B. p(p − 2q + 4r)
    C. p(p + 4q + 2r) < 0
    D. None of these

    Answer B

47. If $x^2 - 4^x + \log_{1/2} a = 0$ does not have two distinct real roots, then maximum value of a is

    A. 1/4
    B. 1/ 16
    C. −1/4
    D. none of these

    Answer B

48. The value of a for which exactly one root of the equation $e^a x^2 - e^{2a}x + e^a - 1 = 0$ lies between 1 and 2 are given by

    A. $\ln\left(\frac{5-\sqrt{13}}{4}\right) < a < \ln\left(\frac{5-\sqrt{13}}{4}\right)$
    B. 0 < a < 100
    C. $\ln\frac{5}{4} < a < \ln\frac{10}{4}$
    D. None of these

    Answer D

49. There are 8 men and 10 women and you need to form a committee of 5 men and 6 women. In how many ways can the committee be formed?

    A. 10420
    B. 11
    C. 11760
    D. None of these

    Answer C

    Explanation: We need to select 5 men from 8 men and 6 women from 10 women
    Number of ways to do this
    $= {}^8C_5 \times {}^{10}C_6$
    $= {}^8C_3 \times {}^{10}C_4 \ [\because {}^nC_r = {}^nC_{(n-r)}]$
    $=(8×7×63×2×1)(10×9×8×74×3×2×1)=56×210=11760=(8×7×63×2×1)$
    $(10×9×8×74×3×2×1)=56×210=11760$

50. A man is watching form the top of the tower a boat speeding away from the tower. The boat makes the angle of depression of 45 degree with the man's eye when at a distance of 60 metres from the tower. After 5 seconds the angle of depression becomes 30°. What is the approximate speed of the boat, assuming that it is running in still water ?

    A. 22 Km/Hr
    B. 28 Km/Hr
    C. 32 Km/Hr
    D. 36 Km/Hr

    Answer C

MOCK TEST - 8

PHYSICS MOCK TEST   Marks: 50

51. A fluid is said to be ideal, if it is.
A. incompressible
B. inviscous
C. viscous and incompressible
D. inviscous and incompressible.

Answer   D

52. What will happen to the kinetic energy if it is a completely inelastic collision?
A. It is conserved.
B. It is lost to maximum value.
C. It is gained from the loss of potential energy.
D. It is lost to minimum value.

Answer   D

53. The _____ of a moving object is the distance it covers in a time interval divided by the time interval.
A. acceleration   B. instantaneous speed
C. average speed   D. instantaneous velocity

Answer   C

54. A rotary converter is a single machine with.
A. one armature and one field
B. two armatures and one field
C. one armature and two fields
D. none of the above

Answer   A

55. In elastic collision, kinetic energy is conserved. This statement is.
A. true
B. false
C. is either true or false, depending upon the colliding bodies
D. is either true or false, depending on the impact of two colliding bodies

Answer   B

56. The volumetric change of the fluid caused by a resistance is known as.
A. volumetric strain   B. volumetric index
C. compressibility   D. adhesion

Answer   C

57. In formula of capacitance $C = A\varepsilon/d$ where d represents the.
A. plate separation   B. distance between charges
C. displacement   D. direction of charge

Answer   A

58. In a single phase rotary converter the number of slip rings will be.
A. two   B. three
C. four   D. six

Answer   A

59. Footcandle is equivalent to which combination of units?
A. lumen/cm²   B. lumen/ft²
C. lumen/m²   D. lumen/in²

Answer   A

PHYSICS MOCK TEST - 8

60. The value of mass density in kgsecVm⁴ for water at 0°C is.
A. 1   B. 1000
C. 100   D. 101.9

61. The English unit "slug" is a unit of.
A. mass   B. weight
C. force   D. energy

Answer   D

62. What is the unit of illumination?
A. Lux   B. Lumen
C. Candela   D. Lumen/watt

Answer   A

63. What is the unit of electric current?
A. Volt   B. Ampere
C. Watt   D. Coulomb

Answer   A

64. The color of an object is the same as the light that is
A. transmitted.   B. absorbed.
C. reflected.   D. all of these.

Answer   B

65. A collector characteristic curve is a graph showing.
A. emitter current (IE) versus collector-emitter voltage (VCE) with (VBB) base bias voltage held constan
B. collector current (IC) versus collector-emitter voltage (VCE) with (VBB) base bias voltage held constant
C. collector current (IC) versus collector-emitter voltage (VCE) with (VBB) base bias voltage held constant
D. collector current (IC) versus collector-emitter voltage (VCC) with (VBB) base bias voltage held constant

Answer   C

66. The number 3 in colour code is.
A. Blue   B. Orange
C. Grey   D. Violet

Answer   B

67. For the same materials in contact, what is TRUE between coefficient of static friction and coefficient of kinetic friction?
A. Coefficient of static friction is always less than the coefficient of kinetic friction
B. Coefficient of static friction is always equal to the coefficient of kinetic friction
C. Coefficient of static friction is always greater than the coefficient of kinetic friction.
D. Coefficient of static friction may be greater than or less than the coefficient of kinetic friction.

Answer   B

Answer   A

68. Why the colour of the ocean appears blue?
A. Because the sunlight falling on it is reflected.
B. Because the sunlight falling on it is refracted.
C. Because the sunlight falling on it is absorbed.
D. Because the sunlight falling on it is scattered.

Answer   D

69. A reverse biased pn junction has resistance of the order of.
A. Ω   B. kΩ
C. MΩ   D. None of the above

Answer   C

70. A pentavalent impurity has .... Valence electrons
A. 3
B. 5
C. 4
D. 6

Answer B

71. The span of broad jump depends upon.
A. mass of the jumper
B. height of jump
C. angle of projection
D. none

Answer C

72. A JFET
A. is a current-controlled device
B. has a low input resistance
C. is a voltage-controlled device
D. is always forward-biased

Answer C

73. A reverse bias pn junction has.
A. Very narrow depletion layer
B. Almost no current
C. Very low resistance
D. Large current flow

Answer B

74. A semiconductor has generally _____ valence electrons.
A. 2
B. 3
C. 6
D. 4

Answer D

75. An antenna has a field pattern $E(\theta) = \cos\theta \cdot \cos 2\theta$. The first null beam width of the antenna is.
A. 450
B. 900
C. 1800
D. 1200

Answer B

76. Persons suffering from myopia are advised to use.
A. convex lens
B. concave lens
C. plano-convex lens
D. plano-concave lens

Answer B

77. For a common emitter circuit if IC/IE = 0.98 then current gain for common emitter circuit will be.
A. 49
B. 98
C. 4.9
D. 25.5

Answer A

78. Another term is used for vibration called.
A. association
B. motion
C. oscillation
D. floatation

Answer C

79. Longitudinal waves move faster through.
A. liquids
B. gases
C. solids
D. both liquids and gases

Answer C

80. The angular speed of the minute hand of a clock in degrees per second is.
A. 1
B. 0.1
C. 0.5
D. 1.5

Answer B

81. If the charge in a capacitor is 4C and the energy stored in it is 4J, find the value of capacitance.
A. 2F
B. 4F
C. 8F
D. 16F

Answer A

82. How many AND gates are required to realize Y = CD + EF + G ?
A. 4
B. 5
C. 3
D. 2

83. The gates required to build a half adder are.
A. EX-OR gate and NOR gate
B. EX-OR gate and OR gate
C. EX-OR gate and AND gate
D. Four NAND gates

Answer D

Answer C

84. Image formed by plane mirror is.
A. Real and erect
B. Real and inverted
C. Virtual and erect
D. Virtual and inverted

Answer C

85. A mass 'M' when attached to the lower end of a mass less spring, whose upper end is fixed, extends it by 'L'. In the extended equilibrium state of the spring, the restoring force exerted by the spring on the mass is.
A. Mg
B. Mg/2
C. 2/Mg
D. Zero

Answer A

86. SI unit of the power of a lens is.
A. Diopter
B. Horse power
C. Hertz
D. Watt

Answer A

87. According to SI units, mass of a substance is measured in
A. moles
B. kilograms
C. meters
D. candelas

Answer B

88. Derived units of physical quantities given by SI are
A. five
B. seven
C. eight
D. nine

Answer A

89. Ampere unit according to SI units is a.
A. base unit
B. derived unit
C. international unit
D. both a and b

Answer A

90. An object thrown from an aeroplane is an example for
A. Projectile motion
B. Resolution of forces
C. Composition of vectors
D. Addition of vectors

Answer B

Explanation: A projectile is the name given to any body which once thrown into space with some initial velocity, moves thereafter under the influence of gravity alone without being propelled by an engine or fuel. The path followed by a projectile is called its trajectory.

91. Acceleration that is produced by a 15N force in a mass of 8 kg will be equal to
A. 1.5 ms^{-2}
B. 1.87 ms^{-2}
C. 2.35 ms^{-2}
D. 2 ms^{-2}

Answer B

92. Bond distance in iodine molecule in solid iodine is
A. 271.5pm
B. 266.6pm
C. 250pm
D. 230pm

Answer A

93. A gardener pushes a lawn roller through a distance of 20m. If he applies a force of 20kg weight in a direction inclined at 60° to the ground, find the work done by him. (g=9.8m/s²)

A. 400J
B. 1960J
C. 250J
D. 2514J

Answer B

Explanation: $F = 20kg\,wt = 20 \times 9.8N$, $s = 20m$, $\theta = 60°$,
$W = F s \cos\theta = 20 \times 9.8 \times 20 \times \cos60°$, $W = 1960J$

94. Which two processes are untidily responsible in the transfer of heat between solid surface and surrounding fluid?

A. conduction and convection
B. conduction and mass transfer
C. convection and mass transfer
D. none of the above

Answer B

95. Conduction plus fluid flow in motion is known as

A. Radiation
B. Conduction
C. Convection
D. Heat exchanger

Answer C

Explanation: It is convection i.e. conduction plus some velocity. It is the process of energy transport affected by the mixing of a fluid medium.

96. How many types of convection are there?

A. 4
B. 3
C. 2
C. 1

Answer C

Explanation: It is of three types i.e. forced convection, natural convection and mixed convection.

97. The sparking between two electrical contacts can be reduced by inserting a

A. capacitor in parallel with contacts
B. capacitor in series with each contact
C. resistance in line
D. none of the above

Answer A

98. In the case of a lossy capacitor, its series equivalent resistance value will be

A. small
B. very small
C. large
D. zero

Answer C

99. The power dissipated in a pure capacitor is

A. zero
B. proportional to applied voltage
C. proportional to value of capacitance
D. both (b) and (c) above

Answer A

100. When a dielectric slab is introduced in a parallel plate capacitor, the potential difference between plates will

A. remain uncharged
B. decrease
C. increase
D. become zero

Answer B

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MOCK TEST - 8
CHEMISTRY MOCK TEST

Marks: 20

101. Alkali metals belong to which group in periodic table?

A. Group 0
B. Group 2
C. Group 3
D. Group 1

Answer D

102. Rare gases are

A. mono atomic
B. di atomic
C. tri atomic
D. None of above

Answer A

103. Water drops are spherical because of ?

A. viscosity
B. density
C. polarity
D. surface tension

Answer D

104. What among following is used to produce artificial rain ?

A. copper oxide
B. carbon monoxide
C. silver iodide
D. silver nitrate

Answer C

105. Which metal is heaviest ?

A. osmium
B. mercury
C. iron
D. nickle

Answer A

106. Washing soda is ?

A. sodium sulphite
B. sodium bicarbonate
C. sodiun carbonate
D. sodium biosulphite

Answer C

107. The color "Carmine" is a shade of which among the following colors?

A. Red
B. Blue
C. Yellow
D. Green

Answer A

108. The minimum temperature at which a combustible substance catches fire is called:

A. fireless temperature
B. ignition temperature
C. static temperature
D. optimum temperature

Answer B

109. The metallurgical process in which a metal is obtained in a fused state is called ?

A. roasting
B. calcinations
C. smelting
D. froth floatation

Answer C

110. Which one of the following is an element?

A. ruby
B. topaz
C. sapphire
D. diamond

Answer D

111. Which among the following are used as components to produce Nitrolim, a widely used fertilizer in past?

A. Nitrogen & Limestone
B. Calcium Carbide and Nitrogen
C. Calcium Carbide & Carbon
D. Calcium Carbide and Limestone

Answer B

112. British Scientist JJ Thomson was awarded Nobel prize in Physics in 1906 for discovery of which of the following particle?
A. Electron
B. Proton
C. Neutron
D. Radio activity

Answer. A

113. Which among the following were not discovered by the time, Mendeleev published his periodic table?
A. Lathanides
B. Actinides
C. Noble Gases
D. Halogens

Answer C

114. The metal does not give H_2 on treatment with dilute HCL is ,
A. Zn
B. Fe
C. Ag
D. Ag

Answer D

115. Horizontal rows in the periodic table are called.
A. Groups
B. Group 14
C. Periods
D. Period 14

Answer C

116. When a magnesium ribbon is burnt in air, the ash formed is
A. black
B. white
C. yellow
D. pink

Answer B

117. Food additives and essences that give flavour to foodstuff are
A. Obtained from mineral oils
B. Obtained from essential oils
C. Obtained from the spices
D. Obtained from petroleum distillates

Answer B

118. What is extracted from Bauxite ?
A. Mica
B. Aluminium
C. Copper
D. Tin

Answer B

119. The alloy of aluminium used for making magnet is
A. duralumin
B. Y–alloy
C. alnico
D. aluminium bronze

Answer C

120. The metal that is usually extracted from sea water is
A. Ca
B. Na
C. K
D. Mg

Answer D

MOCK TEST - 8
ENGLISH MOCK TEST   Marks: 40

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that is the opposite meaning of another. It comes from the Greek words 'anti' for **opposite** and 'Antonym' for name.

121. Antonym of CURTAIL is ?
A. Cramp
B. Prolong
C. Chop
D. Clip

Answer B

122. Antonym of AGONY?
A. meet time constraints
B. aim better resource sharing
C. aim better system utilization
D. aim low system overhead

Answer B

123. Antonym of ACCOLADE?
A. contenance
B. vulgar
C. reprimand
D. virtue

Answer C

124. Antonym of NAIVE?
A. sophisticated
B. brave
C. tireless
D. magnanimous

Answer A

Synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language, for example shut is a synonym of close.

125. Synonym of ALACRITY
A. Mollify
B. Swiftness
C. Laziness
D. Lethargy

Answer B

126. Synonym of ANTIPATHY
A. Dislke
B. Charity
C. Approval
D. Reprove

Answer A

127. Synonym of AGGRAVATE
A. Decline
B. Acquire
C. Excited
D. Irritate

Answer D

128. Synonym of ALTRUISTIC
A. Progressive
B. Selfish
C. Benevolent
D. Inhumane

Answer C

One Word Substitution

129. Bouquet
A. A collection of goods.
B. An arranged bunch of flowers.
C. A bunch of corns.
D. A bunch of birds.

Answer B

130. A disease or accident which ends in death?
A. Drawn
B. Fastidious
C. Fatal
D. Illegal

Answer C

131. Animals that eat flesh
A. Graminivorous
B. Carnivorous
C. Herbivorous
D. Vegetarian

Answer B

132. A man who does a thing for pleasure and not as a profession
A. Amateur
B. Autobiography
C. Arsenal
D. Archives

Answer A

Fill in the Blanks

133. Nordisk have recently_____a product called Glucometer.
A. started
B. commissioned
C. launched
D. begun

Answer C

134. I did not see the point of_____waiting for them, so I went home.
A hanging around
B hanging on
C hang together
D hanging up A

Answer A

135. The Romans were_____science.
A. bad in
B. bad to
C. bad for
D. bad at

Answer D

136. To_____time, please go_____foot and not by bus.
A. spend, with
B. kill, towards
C. utilise, on
D. gain, on

Answer D

Error Detection

137.
A. Even after requesting Ramesh
B. he did not tell us
C. that how he
D. solved the problem.

Answer C

Explanation : Even after requesting Ramesh he did not tell us how he solved the problem.

138.
A. The reason for the bus being late
B. was because the bus
C. was involved
D. in an accident.

Answer B

Explanation : The reason for the bus being late was that the bus was involved in an accident.

139.
A. Neetu deserves to be
B. rewarded by her successful
C. completion of the entire work
D. in such a short time. Explanation: Neetu deserves to be rewarded for her successful completion of the entire work in such a short time.

Answer B

140.
A. The recent survey has
B. indicated that there is
C. perceptible change in
D. climate due to global warming. Explanation: The recent survey has indicated that there is a perceptible change in climate due to global warming.

Answer C

Directions to Solve : -

In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

141. He sat
P : through the Town Hall Park
Q : which flanked a path running
R : under the boughs
S : of a spreading tamarind tree The Proper sequence should be:
A. PQSR
B. RSQP
C. RSPQ
D. PRSQ

Answer B

142. By this time
P : at the railway station
Q : reported mass looting
R : reports of violence were flooding in
S : which police dispatches The Proper sequence should be:
A. RSPQ
B. SPRQ
C. SQRP
D. RSQP

Answer C

143. The appearance
P : this dinosaurs were at their peak
Q : of the first mammals on the earth
R : at the time when
S : went almost unnoticed
The Proper sequence should be:
A. SRPQ
B. QSRP
C. QRPS
D. RPQS

Answer C

144. It would
P : appear from his statement
Q : about the policy of management
R : in dealing with the strike
S : that he was quite in the dark
The Proper sequence should be:
A. RPSQ
B. PSQR
C. RQPS
D. PRQS

Answer B

Spelling test - find correct spelling:

145.
A. Accomodate
B. Accommodate
C. Accomodate
D. Acommodate

Answer B

146.
A. Acoompany   B. Accompany
C. Acommpany   D. Acompany

Answer **A**

147.
A. Accountancy   B. Acountancy
C. Acoountancy   D. Acounttancy

Answer **D**

148.
A. Bibliophilae   B. Bibliophile
C. Bebliophile   D. Bibleophile

Answer **B**

Directions to Solve:
In the questions below the sentences have been given in Active/Passive voice. From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.

149. The doctor advised the patient not to eat rice.
A. The patient was advised by the doctor not to eat rice.
B. The patient was advised by the doctor that he should not eat rice.
C. The patient was being advised by the doctor that he should not rice by the doctor.
D. The patient has been advised not to eat rice by the doctor.

Answer **A**

150. I cannot accept your offer.
A. Your offer cannot be accepted by me.
B. I cannot be accepted by your offer.
C. The offer cannot be accepted by me.
D. Your offer cannot be accepted.

Answer **A**

151. She exclaimed with sorrow that was a very miserable plight.
A. She said with sorrow, "What a pity it is."
B. She said, "What a mystery it is."
C. She said, "What a miserable sight it is."
D. She said, "What a miserable plight it is."

Answer **D**

152. Dhruv said that he was sick and tired of working for that company.
A. Dhruv said, "I am sick and tired of working for this company."
B. Dhruv said, "He was tired of that company."
C. Dhruv said to me, "I am sick and tired of working for this company."
D. Dhruv said, "I will be tired of working for that company."

Answer **A**

Directions to Solve:
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

153. Then
P : it struck me   Q : of course
R : suitable it was   S : how eminently
The Proper sequence should be:
A. SPQR   B. QSRP
C. PSRQ   D. QPSR

Answer **C**

154. By this time
P : at the railway station
Q : reported mass looting
R : reports of violence were flooding in
S : which police dispatches The Proper sequence should be:
A. RSPQ   B. SPRQ
C. SQRP   D. RSQP

Answer **C**

155. Then the women
P : lamenting their evil desire   Q : that had brought
R : wept loudly   S : this sorrow upon them
The Proper sequence should be:
A. RPQS   B. RQPS
C. PQSR   D. PRQS

Answer **A**

Comprehension:
There is modicum of truth in the assertion that "a working knowledge of ancient history is necessary to the intelligent interpretaion of current events". But the sage who uttered these words of wisdom might well have added something on the benefits of studying, particularly, the famous battles of history for the lessons they contain for those of us who lead or aspire to leadership. Such a study will reveal certain qualities and attributes which enabled the winners to win and certain deficiencies which caused the losers to lose. And the student will see that the same patterns recurs consistently, again and again, throughout the centuries.

156. A person who aspires to lead could learn from the history of battles
A. what led the previous leaders win a battle
B. what made them lose a battle
C. the qualities and deficiencies of commanders of these battles
D. the strategies that they have evolved in course of these battles

Answer **C**

157. In this context, "intelligent interpretation of current event" means
A. rational explanation of events
B. appropriate understanding of events
C. intellectual outlook on events
D. skilful interpretation of events

Answer **A**

158. The expression "more than a modicum of truth" means
A. some truth
B. much truth
C. more than a small amount of truth
D. nothing but truth

Answer **C**

159. According to the writer, a study of famous battles of history would
A. be beneficial to wise men
B. provide food to modern leaders for reflection
C. be more useful than a general knowledge of ancient history
D. help us understand the art of modern warfare

Answer **B**

160. A knowledge of history is necessary to interpret current problems because
A. they have roots in the past
B. they can be contrasted with the past events
C. they may be repetitions of past events
D. only then they can be put in a proper context

Answer **C**

MOCK TEST - 8

APTITUDE MOCK TEST   Marks: 40

161. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is.

A. 35.55 km/hr
B. 36 km/hr
C. 71.11 km/hr
D. 71 km/hr

Answer   C

162. Complete the series, 3, 8, 13, 24, 41, ?
A. 70
B. 66
C. 64
D. 62

Answer   A

163. Daughter is to father as niece is to
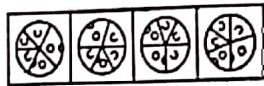A. Nephew
B. Cousin
C. Uncle
D. Mother

Answer   C

164. A watch which gains 5 seconds in 3 minutes was set right at 7 a.m. In the afternoon of the same day, when the watch indicated quarter past 4 o'clock, the true time is.

A. $59\frac{7}{12}$ min. past 3
B. 4 p.m.
C. $58\frac{7}{11}$ min. past 3
D. $2\frac{3}{11}$ min. past 4

Answer   B

165. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

A. 1   (X)
C. 3
(1)B. 2 (2) (3)   (4)
D. 4

Answer   C

166. Find odd one out. 835, 734, 642, 751, 853, 981, 532
A. 751
B. 853
C. 981
D. 532

Answer   A

167. If a quarter kg of potato costs 60 paise, how many paise will 200gm cost?
A. 45 paise
B. 46 paise
C. 47 paise
D. 48 paise

Answer   D

168. Two dice are tossed. The probability that the total score is a prime number is.

A. $\frac{1}{6}$
B. $\frac{5}{12}$
C. $\frac{1}{2}$
D. $\frac{7}{9}$

Answer   B

169. Arrange the following words as per order in the dictionary.
1. RESIGN 2. REPAIR   3. RESIDUE
4. RESEARCH   5. RESCUE
A. 4 5 3 1 2
B. 2 5 4 3 1
C. 2 5 4 1 3
D. 5 4 3 1 2

Answer   B

170. 3. 13, 35, 57, 79, 911, ?
A. 1005
B. 1110
C. 1113
D. 1140

Answer   C

171. Find out how will the key figure (X) look like after rotation.

(X)   (1) (2) (3) (4)

A. 1
B. 2
C. 3
D. 4

Answer   D

172. Which word does NOT belong with the others?
A. guitar
B. flute
C. violin
D. cello

Answer   B

173. Find odd one out. 1, 4, 9, 16, 20, 36, 49.
A. 1
B. 9
C. 20
D. 49

Answer   C

174. A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?
A. 10/21
B. 11/21
C. 2/7
D. 5/7

Answer   A

175. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group?
A. March
B. January
C. July
D. June

Answer   D

176. Look at this series: 5.2, 4.8, 4.4, 4, ... What number should come next?
A. 3
B. 3.3
C. 3.5
D. 3.6

Answer   D

177. A man covered a certain distance at some speed. Had he moved 3 kmph faster, he would have taken 40 minutes less. If he had moved 2 kmph slower, he would have taken 40 minutes more. The distance (in km) is:

A. 35
B. $36\frac{2}{3}$
C. $37\frac{1}{2}$
D. 40

Answer   D

178. A number when divided by three consecutive numbers 9, 11, 13 leaves the remainders 8, 9 and 8 respectively. If the order of divisors is reversed, the remainders will be:
A. 8, 9, 8
B. 9, 8, 8
C. 10, 1, 6
D. 10, 8, 9

Answer   C

179. The average age of the mother and her six children is 12 years which is reduced by 5 years if the age of the mother is excluded. How old is the mother.

A. 40
B. 41
C. 42
D. 43

Answer C

180. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures:

/	/\	/X	/X\	/X X
(A)	(B)	(C)	(D)	(E)

Answer Figures:

/XX/	\XX/	X X X	\XX\	/XX\
(1)	(2)	(3)	(4)	(5)
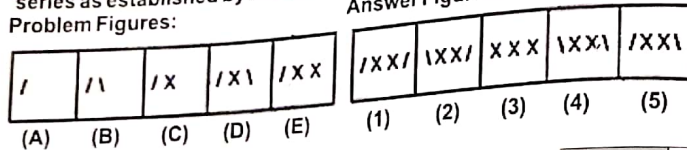
A. 1
B. 2
C. 3
D. 4
E. 5

Answer E

181. Complete the series
1,6,13,22,33,...

A. 46
B. 48
C. 49
D. 51

Answer A

182. The average of six numbers is X and the average of three of these is Y. If the average of the remaining three is z, then

A. $x = y + z$
B. $2x = y + z$
C. $x = 2y + z$
D. $x = y + 2z$

Answer B

183. A, P, R, X, S and Z are sitting in a row. S and Z are in the centre. A and P are at the ends. R is sitting to the left of A. Who is to the right of P ?

A. A
B. X
C. S
D. Z

Answer B

184. If a*b = 2a+3b, then the value of 2*3 + 3*4 is

A. 24
B. 31
C. 32
D. 34

Answer B

Explanation :
Here, a*b does not mean multipbon. It is only signifies the expression 2a+3b

So, 2*3   +   3*4
2x2+3x3   +   2x3+3x4
=4+9   +   = 6+12
=13   +   + 18
=13+18=31

185. A and B enter into a partnership with respective capitals of Rs. 20,000 and Rs. 40,000. At the end of the year, the total profit is Rs. 33,000. If A receives Rs. 15,000 as both his salary and profit, then what is his salary?

A. Rs. 2000
B. Rs. 3000
C. Rs. 3500
D. Rs. 4000

Answer D

Explanation: A's capital : B 's capital, 20000 : 40000 = 1 : 2
Since, the time period is fixed, the profit is distributed in the ratio of capital 1 : 2
Profit of A = (1/3) * 33,000 = Rs. 11,000, =>Salary of A = Rs. (15000 − 11000) = Rs. 4000

186. A man buys 50 pens at marked price of 46 pens from a whole seller. If he sells these pens giving a discount of 1%, what is the profit percent?

A. 5.3 %
B. 7.6 %
C. 10.6 %
D. 12 %

Answer B

Explanation: Let Marked price be Re. 1 each
C.P. of 50 pens = Rs. 46 , =>S.P. of 50 pens = 99% of Rs. 50 = Rs. 49.50
Profit % = (Profit /C.P.) x 100, =>Profit% = (3.50/46) x 100 = 7.6 %

187. P sells an article to Q at 10 % profit. Q sells it to R at 25 % profit. If R pays Rs. 250 for it, What did P pay for it ?

A. Rs. 225
B. Rs. 198..50
C. Rs. 181.81
D. Rs. 162.30

Answer C

Explanation: Selling price of P = Cost price of Q
Selling Price of Q = Cost price of R = Rs. 250 ..... Given
Q sold it to R with 25 % profit., Cost price of Q = 100/125 * 250/1 = Rs. 200 = Selling price of P.
P sold it to Q with 10 % profit. **Cost price of P = 100 /110 * 200 / 1 = Rs. 181.81**

188. Sagar purchased 10 kg of rice at the rate of Rs. 15 per kg and 25 kg of rice at the rate Rs. 14 per kg. He mixed the two and sold the mixture. Approximately at what rate per kg should he sell the mixture to make 40 % profit in the transaction?

A. Rs. 20.00
B. Rs. 19.50
C. Rs. 15
D. Rs. 17.5

Answer A

Explanation:

Rice variety	Quantity(Kg)	Rate(Rs/Kg)	Cost(in Rs)
First	10	15	150
Second	25	14	350
		Total	500

By 40% profit on cost price, =>Selling price of mixture = 140/100 * 500 => Rs. 700
Therefore, selling price per kg of mixture = 700/35 = Rs. 20

189. A boy incurs 5% loss by selling a book for Rs. 1000. At what price should the book be sold to earn 5 % profit?

A. Rs. 1105.26
B. Rs. 1251.50
C. Rs. 1085.13
D. Rs. 1885.13

Answer A

Explanation: Let the new selling price be Rs. x
(100 − loss %) /1000 = (100 + gain %) / x, => (100 − 5) / 1000 = (100 + 5) / x
=> x = (105 × 1000) / 95 = 105000 / 95,
=> x = 1105.26.

190. If selling price of 12 pens is equal to the cost price of 18 pens, find the profit percent.

A. 40%
B. 33.3%
C. 50%
D. 25%

Answer C

Explanation: Selling price of 12 pens = cost price of 18 pens
Therefore, the profit is 6 pens and cost price is 12 pens.
% profit = profit/cost price * 100
=> 6/12 * 100, => 50%

191. Vijay sells a cupboard at 14% below cost price. Had he got Rs. 2086 more, he would have made a profit of 14%. What is the cost price of the cupboard?

A. 7450
B. 14900
C. 7400
D. 7500

Answer D

Explanation: Cost price = 2086/(0.14 + 0.14) = 2086/0.28
=> Rs.7450

192. A boy has to cover a total distance of 300 kms. in 6 hours. He travels at the rate of 60 kmph. for first 90 minutes and next 100 kms. at the rate of 50 kmph. At what average speed must he travel now in order to com complete the journey in 6 hours?

A. 25 kmph.
B. 32 kmph
C. 44 kmph
D. 58 kmph

Answer C

Explanation:
The boy travels 60 kmph for 90 min, this means he travels 90 km.
Next 100 km at the rate of 50 kmph, this means he travels 100 km.
Total distance traveled till now = 100 + 90 = 190 km
Time spent = 1.5 + 2 = 3.5 hr, Required speed = Remaining distance/ Time
=> (300 – 190) /(6 – 3.5)
=> 110/ 2.5 = 44 kmph

193. If John covers a certain distance in 1 hr. 24 min. by covering two third of the distance at 4 kmph and the rest at 5 kmph, then find the total distance.

A. 4 km
B. 6 km
C. 6.8 km
D. 7.2 km

Answer B

Explanation:
Let the total distance be y km. Then,
=> (2/3)y/4 +(1/3)y/5 =7/5, => y/6 + y/15 = 7/5, => 7y =42
=> y = 6 km

194. A squirrel can climb 5 metres of a pole in one minute but slips 2 metres in the next minute. How much time will the squirrel take to climb 26 metres?

A. 14 minutes
B. 12 minutes
C. 15 minutes
D. 18 minutes

Answer C

Explanation:
As the squirrel climbs 5 m in one minute and slips 2 metres in the next minute, it climbs 3 metres in 2 minute, => To climb 26 metres, the time required is: The squirrel will climb (26 – 5) = 21 metres = 7 * 3 metres in 7 * 2 = 14 minutes,
=> Also, the last 5 metres it climbs in another 1 minute
=> Hence, total time required = 14 + 1 = 15 minutes

195. A man complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.

A. 220 km
B. 224 km
C. 230 km
D. 234 km

Answer B

196. CTPN : DSQM : : MUSK : ?

A. NUTL
B. NTTJ
C. NTTL
D. LTRS

Answer C

197. Find odd one out. 3, 5, 11, 14, 17, 21.

A. 21
B. 17
C. 14
D. 3

Answer C

198. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

A. 159
B. 194
C. 205
D. 209

Answer D

199. If the ratio of the diameters of two spheres is 3 : 5, then What is the ratio of their surface areas?

A. 9 : 25
B. 9 : 10
C. 3 : 5
D. 27 : 125

Answer A

200. As 'Furniture' is related to 'Bench' in the same way 'Stationary' is related to what?

A. Godown
B. Room
C. Pen
D. Chair

Answer C

MOCK TEST - 9

MATHS MOCK TEST
Marks: 50

1. The square root of which number is rational
A. 7
B. 1.96
C. 0.04
D. 13
Answer B

2. Probability of getting even number in a single throw of dice is
A. $\frac{1}{2}$
B. $\frac{1}{6}$
C. $\frac{5}{6}$
D. None Of These
Answer B

3. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of his son is
A. 20 years
B. 21 years
C. 22 years
D. 24 years
Answer C

4. 5. A book was sold for Rs 27.50 with a profit of 10%. If it were sold for Rs. 25.75, then would have been percentage of profit and loss ?
A. 2% Profit
B. 3% Profit
C. 2% Loss
D. 3% Loss
Answer B

5. Let R be a non-empty relation on a collection of sets defined by ARB if and only if A ∩ B = Ø Then (pick the TRUE statement)
A. R is relexive and transitive
B. R is an equivalence relation
C. R is symmetric and not transitive
D. R is not relexive and not symmetric
Answer C

6. The set of all real numbers under the usual multiplication operation is not a group since
A. zero has no inverse
B. identity element does not exist
C. multiplication is not associative
D. multiplication is not a binary operation
Answer A

7. If A:B = 2:3, B:C = 4:5 and C:D = 6:7, then find the value of A:B:C:D
A. 15:24:30:35
B. 16:24:30:35
C. 17:24:30:35
D. 18:24:30:35
Answer B

8. If 40% of a number is equal to two-third of another number, what is the ratio of first number to the second number.
A. 2:5
B. 2:7
C. 5:7
D. 5:3
Answer D

9. How many 2-digit positive integers are divisible by 4 or 9?
A. 32
B. 22
C. 30
D. 34
Answer C

MATHS MOCK TEST - 9

10. Two trains of equal lengths take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train be 120 metres, in what time (in seconds) will they cross each other traveling in opposite direction?
A. 10
B. 12
C. 15
D. 20
Answer B

11. How many natural numbers are there between 23 and 100 which are exactly divisible by 6 ?
A. 8
B. 11
C. 12
D. 13
Answer D

12. A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is.
A. 2:1
B. 3:1
C. 3:2
D. 4:3
Answer B

13. Salaries of Ravi and Sumit are in the ratio 2:3. If the salary of each is increased by Rs 4000, the new ratio becomes 40:57. What is Sumit present salary.
A. 32000
B. 34000
C. 38000
D. 40000
Answer C

14. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even ?
A. $\frac{3}{4}$
B. $\frac{1}{4}$
C. $\frac{7}{4}$
D. $\frac{1}{2}$
Answer A

15. In a Cricket cup total 153 matches were played and every two teams played exactly one match with each other. So what were the total number of teams participating in Cricket Cup ?
A. 15
B. 16
C. 17
D. 18
Answer D

16. In terms of percentage profit, which among following the best transaction.
A. C.P. 36, Profit 17
B. C.P. 50, Profit 24
C. C.P. 40, Profit 19
D. C.P. 60, Profit 29
Answer D

17. A plot is sold for Rs. 18,700 with a loss of 15%. At what price it should be sold to get profit of 15%.
A. Rs 25300
B. Rs 22300
C. Rs 24300
D. Rs 21300
Answer A

18. A producer of tea blends two varieties of tea from two tea gardens one costing Rs 18 per kg and another Rs 20 per kg in the ratio 5 : 3. If he sells the blended variety at Rs 21 per kg, then his gain percent is.
A. 12%
B. 13%
C. 14%
D. 15%
Answer A

19. Area bounded by the curve ay = 3(a^2 − x^2) and the x-axis is
A. a^2
B. $2a^2$
C. $3a^2$
D. $4a^2$
Answer D

20. Sahil took a loan for 6 years at the rate of 5% per annum on Simple Interest, If the total interest paid was Rs. 1230, the principal was.

A. 4100　　　　B. 4200
C. 4300　　　　D. 4400

Answer　A

21. Two goods train each 500 m long, are running in opposite directions on parallel tracks. Their speeds are 45 km/hr and 30 km/hr respectively. Find the time taken by the slower train to pass the driver of the faster one.

A. 12 sec　　　　B. 24 sec
C. 48 sec　　　　D. 60 sec

Answer　B

22. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is.

A. 8.5 km/hr　　　　B. 9 km/hr
C. 10 km/hr　　　　D. 12.5 km/hr

Answer　C

23. The matrix $A= \begin{bmatrix} 9 & 0 \\ 0 & 9 \end{bmatrix}$ is a ?

A. even matrix　　　　B. odd matrix
C. scalar matrix　　　　D. identity matrix

Answer　C

24. How many meters of carpet 63 cm wide will be required to cover the floor of a room 14 m by 9 m?

A. 200 m　　　　B. 210 m
C. 220 m　　　　D. 185 m

Answer　A

25. The area (in sq cm) of the largest circle that can drawn inside a square of side 28 cm, is.

A. 17248　　　　B. 784
C. 8624　　　　D. 616

Answer　D

26. How many 3 digit numbers, in all, are divisible by 6?

A. 140　　　　B. 150
C. 160　　　　D. 170

Answer　B

27. If a = b and b = c, then a = c. This property is called ?

A. Reflexive　　　　B. Transitive
C. Trichotomy　　　　D. Symmetric

Answer　B

28. What is the value of Golden ratio which is made popular recently by the book the Da Vinci Code?

A. 1.414　　　　B. 1.618
C. 1.723　　　　D. 3.142

Answer　B

29. Among the following which whole number has no predecessor?

A. –1　　　　B. 0
C. 1　　　　D. e

Answer　B

30. If A and B are in the ratio 3 : 4 and B and C are in the ratio 12 : 13, then A and C will be in the ratio.

A. 3 : 13　　　　B. 9 : 13
C. 36 : 13　　　　D. 13 : 9

Answer　B

31. A man rows to a place 48 km distant and come back in 14 hours. He finds that he can row 4 km with the stream in the same time as 3 km against the stream. The rate of the stream is.

A. 1 km/hr　　　　B. 1.5 km/hr
C. 2 km/hr　　　　D. 2.5 km/hr

Answer　A

32. What is average (Arithmetic Mean) of the numbers: 2, 4, 5, 0, 9, 10, and 12?

A. 5　　　　B. 6
C. 7　　　　D. 8

Answer　B

33. There was simple interest of Rs. 4016.25 on a principal amount at the rate of 9%p.a. in 5 years. Find the principal amount

A. Rs 7925　　　　B. Rs 8925
C. Rs 7926　　　　D. Rs 7925

Answer　B

34. On simplifying $8^3 \times 2^4$, we get

A. 16^7　　　　B. 2^{13}
C. 2^{10}　　　　D. 8^4

Answer　B

35. Area enclosed by the curve $|x-2|+|x+1|=1$ is.

A. $\frac{2}{4}$ sq. units　　　　B. $\frac{15}{4}$ sq. units
C. 2 sq. units　　　　D. 4 sq. units

Answer　C

36. The value of 5.63 × 5.63 + 11.26 × 2.37 + 2.37 × 2.37 is.

A. 237　　　　B. 126
C. 56　　　　D. 64

Answer　D

37. A TV is purchased at Rs. 5000 and sold at Rs. 4000, find the lost percent.

A. 10%　　　　B. 20%
C. 25%　　　　D. 28%

Answer　B

38. P: 7 < 4, q: 6 > 11, disjuntion p∨q is

A. Known　　　　B. Unknown
C. True　　　　D. False

Answer　D

39. Two matrices A and B are multiplied to get BA if

A. no of rows of A is equal to no of columns of B
B. no of columns of A is equal to columns of B
C. both have same order
D. both are rectangular

Answer　A

40. The number of ordered pairs (a, b) such that the equations ax+ by = 1 and xλ + yλ = 50 have all solutions integral is

A. 72　　　　B. 66
C. 84　　　　D. 36

Answer　B

41. If equation $x^2 - (2 + m)x + (m^2 - 4m + 4) = 0$ has coincident roots then

A. m = 0, 1　　　　B. m = 2/3 , 1
C. m = 0, 2　　　　D. m = 2/3 , 6

Answer　D

42. The perimeter of one face of a cube is 20 cm. Its volume will be.

A. 125cm³　　　　B. 400cm³
C. 250cm³　　　　D. 625cm³

Answer　A

43. Under property of equality of real numbers, $a = b$ then $b = a$ and $\forall a, b \in R$ is called.
A. symmetric property
B. additive property
C. transitive property
D. multiplicative property

Answer A

44. Under property of equality of real numbers, $a = a$ & $\in a \in R$ is called.
A. reflexive property
B. symmetric property
C. additive property
D. transitive property

Answer A

45. Under property of inequality of real numbers, $a<b$ or $a=b$ or $a>b$ and $\in a, b \in R$ is called.
A. additive property
B. transitive property
C. trichotomy property
D. multiplicative property

Answer C

46. A hollow iron pipe is 21 cm long and its external diameter is 8 cm. If the thickness of the pipe is 1 cm and iron weights 8g/cm cube, then find the weight of the pipe.
A. 3.696 kg
B. 3.686 kg
C. 2.696 kg
D. 2.686 kg

Answer A

47. If $A = \{2, 3\}$ and $B = \{x \mid x \in N$ and $x < 3\}$, then $A \times B$ is.
A. $\{(2, 1), (2, 2), (3, 1), (3, 2)\}$
B. $\{(1, 2), (1, 3), (2, 2), (2, 3)\}$
C. $\{(1, 2), (2, 2), (3, 3), (3, 2)$
D. None of these.

Answer A

48. What will be the compound interest on Rs. 25000 after 3 years at the rate of 12 % per annum.
A. Rs 10123.20
B. Rs 10123.30
C. Rs 10123.40
D. Rs 10123.50

Answer A

49. We need to divide Total Sum Rs. 3364 between Ram and Sham so that Ram's share at the end of 5 years may equal to Sham's share at the end of seven years with compound interest rate at 5 percent.
A. 1864 and 1500
B. 1764 and 1600
C. 1664 and 1700
D. 1564 and 1800

Answer B

50. Reema took a loan of Rs 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?
A. 5%
B. 6%
C. 7%
D. 8%

Answer B

51. Speed of electromagnetic waves is same
A. for all wavelengths
B. in all media
C. for all intensities
D. for all frequencies

Answer C

52. Electromagnetic waves ware transverse in nature is evident by:
A. polarization
B. interference
C. reflection
D. diffraction

Answer A

53. Electromagnetic waves do not transport:
A. energy
B. charge
C. momentum
D. information

Answer B

54. The rms value of the electric field of the light coming from the sun is 720 N/C. The average total energy density of the electromagnetic wave is:
A. 4.58×10^{-6} J/m^3
B. 6.37×10^{-9} J/m^3
C. 81.35×10^{-12} J/m^3
D. 3.3×10^{-3} J/m^3

Answer B

55. Which of the following rays is emitted by a human body?
A. X-rays
B. Visible rays
C. UV-rays
D. IR-rays

Answer D

56. The wavelength of X-rays is of the order of:
A. 10^{-3} m
B. 10^{-5} m
C. 10^{-10} m
D. 10^{-12}

Answer C

57. In a plane electromagnetic wave, the electric field oscillates sinusoidally at a frequency of 2.0×10^{10} Hz and amplitude 48 Vm^{-1}. The wavelength of the wave is:
A. 1.5 m
B. 1.5×10^{-1} m
C. 1.5×10^{-2}
D. 1.5×10^{-3} m

Answer C

58. The total number of magnetic field lines passing through an area is termed as?
A. Voltage
B. EMF
C. Magnetic flux
D. Magnetic flux density

Answer B

Explanation: The number of magnetic flux lines per unit area is the magnetic flux, because flux is the number of field lines per unit area.

59. The formula for induced emf is.
A. emf=B^{2}l
B. emf=Bil
C. emf=Blv
D. emf≈B^{2}v

Answer C

Explanation: The formula for induced emf is: emf=Blv, where B is the magnetic field, l is the length of the conductor & v is the velocity with which it is moving in the magnetic field.

60. A long magnetic needle of Length 2L, magnetic moment M and pole strength m units is broken into two at the middle. The magnetic moment and pole strength of each piece will be ?

A. (M/2), m/2
B. M, m/2
C. M/2, m
D. M, m

Answer C

61. Which of the following are the applications of D.C. system ?
A. Battery charging work
B. Arc welding
C. Electrolytic and electro-chemical processes
D. All of the above

Answer D

62. A bar magnet has a coercivity $4 \times 10^3 AmX^1$. It is desired to demagnetize it by inserting it inside a solenoid 12 cm long and having 60 turns. The current carried by the solenoid should be :

A. 8 A
B. 6 A
C. 4.5 A
D. 2 A

Answer A

63. The work done in turning a magnet of magnetic moment 'M' by an angle of 90° from the meridian is 'n' times the corresponding work done to turn it through an angle of 60°, where 'n' is given by.

A. $\frac{1}{2}$
B. 2
C. $\frac{1}{4}$
D. 1

Answer B

64. If the ratio of intensities of two waves is 1: 25, then the ratio of their amplitudes will
A. 1 : 25
B. 5 : 1
C. 26 : 24
D. 1 : 5

Answer D

65. The colour code for a resistor of resistance 3.5kΩ with 5% tolerance is
A. orange, green, orange and gold
B. red, yellow, black and gold
C. orange, green, orange and silver
D. orange, green, red and gold

Answer D

66. The process of adding impurities to a pure semiconductor is called.
A. mixing
B. doping
C. diffusing
D. refining.

Answer B

67. Identify the vector quantity from the following
A. Heat
B. Angular momentum
C. Time
D. Work

Answer B

68. Which of the following is known as indirect band gap semiconductors?
A. Germanium
B. Nickel
C. Platinum
D. Carbon

Answer A

Explanation: The elemental semiconductor is made up of single element from the fourth column elements such as Germanium. Here recombination takes place takes place via traps. It is called indirect bad gap semiconductors.

69. Which column elements are combined to make compound semiconductors?
A. First and fourth
B. Fifth and sixth
C. Second and fourth
D. Third and fifth

Answer D

Explanation: The compound semiconductors are made by combining the third and fifth column elements. Such as GaAs are made by combining third and fifth column elements.

70. If a conductor 0.2m long moves with a velocity of 0.3m/s in a magnetic field of 5T, calculate the emf induced.
A. 0.3V
B. 0.03V
C. 30V
D. 3V

Answer A

Explanation: The formula for induced emf is: emf=Blv. Substituting the values of B, l and v from the question, we get emf=0.3V.

71. Find the force experienced by an electromagnetic wave in a conductor?
A. Electrostatic force
B. Magneto static force
C. Electro motive force
D. Lorentz force

Answer D

Explanation: The electromagnetic wave experiences Lorentz force which is the combination of the electrostatic force and magneto static force. It is given by F = QE + Q (V X B).

72. Find the energy of a coil of inductance 18mH and current passing through it 1.25A.(in 10^{-3} order)
A. 14.06
B. 61
C. 46.1
D. 28.12

Answer A

Explanation: The magnetic energy possessed by a coil is given by $E = 0.5 \times LI^2$. Put L $=18 \times 10^{-3}$ and I = 1.25, thus we get $E = 0.5 \times 18 \times 10^{-3} \times 1.25^2 = 14.06 \times 10^{-3}$ units.

73. Using Maxwell equation which of the following cannot be calculated directly?
A. B
B. D
C. A
D. H

Answer C

Explanation: The Maxwell equations can be used to compute E, H, D, B and J directly. It is not possible to find the magnetic vector potential A directly.

74. Which of the following relation will hold well?
A. D = μ H
B. B = ε E
C. E = ε D
D. B = μ H

Answer D

75. Choose the best relation.
A. A = -Div(V)
B. V = Curl(A)
C. H = -Grad(V)
D. V = Div(E)

Answer C

Explanation: For any magnetic field, the magnetic field intensity will be the negative gradient of the potential of the field. This is given by H = -Grad(V).

76. The electric field intensity at a point situated 4 meters from a point charge is 200 N/C. If the distance is reduced to 2 meters, the field intensity will be
A. 400 N/C
B. 600 N/C
C. 800 N/C
D. 1200 N/C

Answer C

77. The lines of force due to charged particles are
A. always straight
B. always curved
C. sometimes curved
D. none of the above

Answer B

78. The electric field at a point situated at a distance d from straight charged conductor is
A. proportional to d
B. inversely proportional to d
C. inversely proportional to d
D. none of the above

Answer B

79. A gang condenser is a
A. polarised capacitor
B. variable capacitor
C. ceramic capacitor
D. none of the above

Answer B

80. If 100 waves pass through a medium in 20 seconds and their wavelength is 6cm then velocity is.
A. 0.5ms⁻¹
B. 0.3ms⁻¹
C. 1ms⁻¹
D. 2.5ms⁻¹

Answer B

81. Velocity of simple harmonic motion at mean position is always
A. maximum
B. minimum
C. zero
D. negative

Answer A

82. If spring is stiff, then value of k is
A. small
B. moderate
C. large
D. approx. zero

Answer C

83. Motion of a ball placed in a bowl is
A. simple harmonic motion
B. compressional motion
C. damped motion
D. none of the above

Answer A

84. Longitudinal waves move faster through
A. liquids
B. gases
C. solids
D. both liquids and gases

Answer C

85. When a body falls freely under gravity, then the work done by the gravity is
A. Positive
B. Negative
C. Zero
D. Infinity

Answer A

Explanation: If a force acting on a body has a component in the direction of displacement, then the work done by the force is positive. Hence when a body falls freely under the influence of gravity, The work done by the gravity is positive.

86. What is the minimum number of coplanar vectors of different magnitudes which can give zero resultant?
A. One
B. Two
C. Three
D. Four

Answer C

Explanation: If three vectors can be represented by the three sides of a triangle taken in the same order, then their resultant is a zero vector.

87. Two persons are pulling the ends of a string in such a way that the string is stretched horizontally. When a weight of 10kg is suspended in the middle of the string the string does not remain horizontal. Can the persons make it horizontal again by pulling it with a greater force?
A. Yes
B. No

Answer C

Explanation: The persons cannot make it horizontal again by pulling it with a greater force because the vertical weight cannot be balanced by the horizontal force, however large the two forces may be.

88. Find the magnitude of the centripetal acceleration of a particle on the tip of a fan blade, 0.30 metre in diameter, rotation at 1200 rev/minute
A. 40 m/s²
B. 4737.6 m/s²
C. 245 m/s²
D. 20 m/s²

Answer B

Explanation: $v = 1200/60 = 20$ rps, $\omega = 2\pi v = 2\times\pi\times20 = 40\pi$ rad/sec
Magnitude of acceleration $= r\omega^2 = 0.30\times(40\pi)^2 \approx 4737.6$ m/s²

89. "Candela", according to system international is a.
A. base unit
B. derived unit
C. supplementary unit
D. international unit

Answer A

90. In the given options, the secondary fundamental unit is.
A. Length
B. Luminous intensity
C. Plane angle
D. Time

Answer B

91. Plane angle and solid angle are.
A. Primary fundamental units
B. Secondary fundamental units
C. Supplementary units
D. Derived units

Answer C

92. The unit of luminance is.
A. Lumen
B. Candela per square meter
C. Lux
D. Lumen per square meter

Answer B

93. Angle between two radii of circle that cut off on circumference is called.
A. radian
B. steradian
C. plane angle
D. both a and b

Answer A

94. What is the energy in a capacitor if the voltage is 5V and the charge is 10C?
A. 6.25J
B. 35J
C. 6.54J
D. 4.55J

Answer A

95. Relative to its period on the earth, the period a pendulum on the moon is.
A. Shorter
B. Longer
C. The same as on the earth
D. Varies with time

Answer B

96. Real images formed by single convex lenses are always.
A. on the same side of the lens as the object
B. inverted
C. erect
D. smaller than the object

Answer B

97. An object is placed 12 cm from a convex lens whose focal length is 10 cm. The image must be.
A. virtual and enlarged
B. virtual and reduced in size
C. real and reduced in size
D. real and enlarged

Answer D

98. Which of the following is NOT one of the fundamental quantities in physics?
A. Time
B. Length
C. Weight
D. Mass

Answer C

99. The least distance of distinct vision is .
A. 25 cm
B. 25 m
C. 0.25 cm
D. 2.5 m

Answer A

100. The power of a convex lens of focal length 50 cm is.
A. + 2D
B. −2D
C. 50 D
D. −5D

Answer A

MOCK TEST - 9

CHEMISTRY MOCK TEST   Marks: 20

101. Conduction band electrons have more mobility than holes because they are
A. experience collision more frequently
B. experience collision less frequently
C. have negative charge
D. need less energy to move them

Answer	B

102. Polymetallic Modules (PMN) predominantly contain?
A. Calcium   B. Magnesium
C. Manganese   D. Copper

Answer	C

103. Which variety of glass is heat resistant?
A. bottle glass   B. flint glass
C. hard glass   D. pyrex glass

Answer	D

104. Which of the following gases is the most toxic?
A. Carbon dioxide   B. Sulphur dioxide
C. Carbon monoxide D. Acetic acid

Answer	C

105. The acid generally stored in batteries is.
A. Nitric Acid   B. Hydrochloric Acid
C. Sulphuric Acid   D. Acetic Acid

Answer	C

106. Air contains maximum amount of
A. oxygen   B. nitrogen
C. hydrogen   D. carbon dioxide

Answer	B

107. Covalent compounds
A. have high melting and boiling point
B. are mostly soluble in water
C. are formed between atoms of metals and non-metals
D. are formed by the sharing of electrons in the bonding atoms.

Answer	D

108. The main chemical constituent of clay is ?
A. aluminium silicate   B. zeolites
C. aluminium borosilicate D. silicon oxide

Answer	A

109. Which is also called Stranger Gas ?
A. Xenon   B. Neon
C. Argon   D. Nitrous oxide

Answer	A

110. The concept of an electrolyte in water was described by
A. Faraday   B. Ohm
C. Debye   D. No Explanation

Answer	D

CHEMISTRY MOCK TEST - 9

111. Atomic number of an element gives
A. the number of nucleons in its atom
B. the number of electrons in its atom
C. the weight of the atom of the element
D. the total number of elementary particles in its atom

Answer	B

112. Gammaxene, D.D.T. and Bleaching powder are important compounds of.
A. Chlorine   B. Nitrogen
C. Sulphur   D. Phosphorus

Answer	A

113. Which among the following happens in an oxidation reaction ?
A. Electrons are gained   B. Electrons are lost
C. Protons are gained   D. Protons are lost

Answer	B

114. Sugars are converted in the liver into
A. Glycogen   B. Vitamin
C. Monosaccharide   D. None of above

Answer	A

115. Which metal remains in the liquid form under normal conditions?
A. zinc   B. radium
C. uranium   D. mercury

Answer	D

116. Which compound of mercury is used as antiseptic?
A. Mercuric sulphide   B. Mercuric oxide
C. Mercuric chloride   D. Mercuric iodide

Answer	C

117. Atomic number is equal to
A. Number of electrons
B. Number of nutron
C. Number of protons
D. Total number of protons and neutrons

Answer	C

118. Trimethylxanthine is a chemical name of a stimulant which is found in tea & coffee. What is the popular name?
A. Thein   B. Caffeine
C. Theobromine   D. Theophylline

Answer	B

119. Haber Process is used to produce which among the following?
A. Potash   B. Ammonia
C. Urea   D. Nitrates

Answer	B

120. The main active constituent of tea and coffee is.
A. nicotine   B. chlorophyll
C. Caffeine   D. aspirin

Answer	C

MOCK TEST - 9

ENGLISH MOCK TEST   Marks: 40

Directions to Solve:
In the following questions choose the word which is the exact **OPPOSITE** of the given words.

121. CONCEDE
A. Object   B. Refuse
C. Grant   D. Accede

Answer   B

122. VIOLENT
A. Humble   B. Harmless
C. Gentle   D. Tame

Answer   C

123. EXODUS
A. Restoration B. Return
C. Home-coming D. Influx

Answer   D

124. NOISOME
A. Upright   B. Pacific
C. Rank   D. Fetid

Answer   A

Directions to Solve:
In the following the questions choose the word which best expresses the meaning of the given word.

125. UNITE
A. Unfold   B. Unchain
C. Combine   D. Unhinge

Answer   C

126. COMBAT
A. Conflict   B. Quarrel
C. Feud   D. Fight

Answer   D

127. WARRIOR
A. Soldier   B. Sailor
C. Pirate   D. Spy

Answer   A

128. DISTANT
A. Far   B. Removed
C. Reserved   D. eparate

Answer   A

Directions to Solve:
Read each sentence to find out whether there is any grammatical error in it. The error, if any will be in one part of the sentence. The letter of that part is the answer. If there is no error, the answer is 'D'. (Ignore the errors of punctuation, if any).

129.
A. One of the members   B. expressed doubt if
C. the Minister was an atheist.   D. No error.

Answer   B

130.
A. I have got   B. my M.Sc. degree
C. in 1988.   D. No error.

Answer   A

Directions to Solve: Find the correctly spelt words.

131.
A. Benefitted   B. Benifited
C. Benefited   D. Benefeted

Answer   C

132.
A. Itinarery   B. Itinerary
C. Itenary   D. Itinarary

Answer   B

Explanation: Itinerary – of a trip, of a journey, of travelling, of the route taken on a journey.

133.
A. Survaillance   B. Surveillance
C. Survellance   D. Surveilance

Answer   B

Explanation: Surveillance – careful observation of a person or group, supervision.

134.
A. Occured   B. Occurad
C. Ocurred   D. Occurred

Answer   D

Directions to Solve:
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

135. He said
P : here is the cat
Q : throughout the night
R : which had been paying havoc with things
S : that ate the rat
The Proper sequence should be:
A. PSQR   B. PSRQ
C. QPRS   D. QRPS

Answer   B

136. Of many artists
P : those who impressed me the most
Q : I was a child
R : but those with unique personalities off stage
S : were not always the successful ones
The Proper sequence should be:
A. SRQP   B. QRSP
C. RSPQ   D. QPSR

Answer   D

137. In the darkness
P : the long, narrow beard
Q : was clearly visible with
R : the tall stooping figure of the doctor
S : and the aquiline nose
The Proper sequence should be:
A. RQPS
B. PSQR
C. RSQP
D. QPRS

Answer A

138. A French woman
P : committed suicide
Q : where she had put up
R : who had come to Calcutta
S : by jumping from the first floor balcony of the hotel
The Proper sequence should be:
A. PRQS
B. QSRP
C. RPSQ
D. SRQP

Answer C

Directions to Solve:
In questions given below out of four alternatives, choose the one which can be substituted for the given word/sentence.

139. A name adopted by an author in his writings
A. Nickname
B. Pseudonym
C. Nomenclature
D. Title

Answer B

140. Study of birds
A. Orology
B. Optology
C. Ophthalmology
D. Ornithology

Answer D

141. Hater of learning and knowledge
A. Misologist
B. Bibliophile
C. Misogynist
D. Misanthropist

Answer A

142. A person interested in reading books and nothing else
A. Book-keepr
B. Scholar
C. Book-worm
D. Student

Answer C

Comprehension
The greatest thing this age can be proud of is the birth of man in the conciousness of men. In his drunken orgies of power and national pride man may flout and jeer at it. when organised national selfishness, racial antipathy and commercial self seeking begin to display their ugly deformities in all their nakedness, then comes the time for man to know that his salvation is not in political organisations and extended trade relations, not in any mechanical re-arrangement of social system but in a deeper transformation of life, in the liberation of consciousness in love, in the realisation of God in man.

143. In this passage, the phrase "God in man" implies
A. God having assumed the shape of man
B. neither fully godly nor fully human
C. man being transformed into God
D. the divine qualities in man

Answer D

144. According to the author, "salvation" of human beings lies in the
A. extended trade relations
B. spiritual transformation of life
C. orgy of national pride
D. wholehearted participated in political organisations

Answer B

145. In the phrase "the birth of Man in the consciousness of men", AMn stands for
A. power and arrogance
B. egocentricity
C. noble human qualities
D. an idealistic notion of the human self

Answer D

146. People jeer at the 'birth of Man' in the human consciousness when they
A. begin to think of themselves as God
B. become power hungry
C. restructure the social system
D. become mentally deranged

Answer B

Verbal Analogies

147. Rain Gauge : Rain :: ? : Humidity
A. Odometer
B. Seismograph
C. Hygrometer
D. None of the above Seismograph –Earthquake

Answer C

148. Doctor : Nurse :: ? : Follower
A. Employer
B. Leader
C. Worker
D. Manager

Answer B

149. HOPE:ASPIRES
A. love:elevates
B. film:flam
C. fib:lie
D. fake:ordinary

Answer C

150. CORPOREAL:SPIRITUAL
A. mesa : plateau
B. moron : savant
C. foreigner : immigrant
D. pedagogue : teacher

Answer B

Change of Voice
151. He displeased Mr. Mathur.
A. Mr. Mathur was displeased on him.
B. Mr. Mathur was displeased for him.
C. Mr. Mathur was displeased at him.
D. Mr. Mathur was displeased with him.

Answer D

152. His behaviour surprised me.
A. I was surprised for his behaviour.
B. I was surprised at his behaviour.
C. I was surprised with his behaviour.
D. I was surprised on his behaviour.

Answer B

ENGLISH MOCK TEST - 9

Explanation: Note: We use "at" preposition with word "surprised"

153. We crowned him leader.
A. He had crowned leader.   B. He crown leader.
C. He was crowned leader.   D. He crowned leader.

Answer C

154. Please give me a pen.
A. You are ordered to give me a pen.
B. You are ought to give me a pen.
C. You are requested to give me pen.
D. You are requested to give me a pen.

Answer D

Direction: Each of the following sentences is followed by four words or group of words. Fill in the blanks with the appropriate word or group of words.

155. She tries to adjust_____ her relations.
A. for   B. at
C. so   D. with

Answer D

Explanation : with

156. She was remarkably _____ in singing and dancing.
A. accomplished   B. conducive
C. fluctuating   D. cooperative

Answer A

Explanation : accomplished, proficient or skilful

157. Sheila gained an advantage _____ me.
A. upon   B. from
C. on   D. over

Answer D

Explanation : over

158. I have given her _____.
A. a work   B. some works
C. a piece of work   D. many works

Answer C

Change of Speech
159. The man said, "No, I refused to confers guilt."
A. The man emphatically refused to confers guilt.
B. The man refused to confers his guilt.
C. The man told that he did not confers guilt.
D. The man was stubborn enough to confers guilt.

Answer A

160. Nita ordered her servant to bring her cup of tea.
A. Nita told her servant, "Bring a cup of tea."
B. Nita said, "Bring me a cup of tea."
C. Nita said to her servant, "Bring me a cup of tea."
D. Nita told her servant, "Bring her that cup of tea."

Answer C

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MOCK TEST - 9

APTITUDE MOCK TEST   Marks: 40

161. Choose the word which is least like the others word in a group :
A. Carrot   B. Tomato
C. Potato   D. Ginger

Answer A

162. In a certain code, TOGETHER is written as RQEGRJCT. In the same code, PAROLE will be written as,
A. RYPQJG   B. RCPQJG
C. NCPQJG   D. NCPQJC

Answer C

163. Which number would replace the question mark in series 7,12,19,?,39
A. 24   B. 28
C. 31   D. 33

Answer B

164. Choose the word which is different from the rest.
A. Sheep   B Gazelle
C Ibex   D Shrew

Answer B

165. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.
Problem Figures: Answer Figures:

(A)   (B)   (C)   (D)   (E)   (1)   (2)   (3)   (4)   (5)
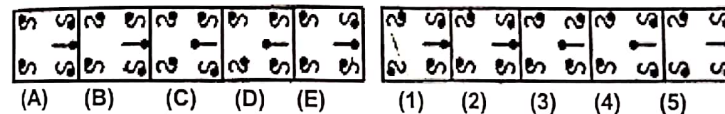
A. 1   B. 2
C. 3   D. 4   E. 5

Answer B

166. A person travels from P to Q at a speed of 40 km/hr and returns by increasing his speed by 50%. What is his average speed for both the trips ?
A. 44 km/hour   B. 46 km/hour
C. 48 km/hour   D. 50 km/hour

Answer C

167. Clock : Time :: Thermometer : ?
A. Heat   B. Radiation
C. Energy   D. Temperature

Answer D

168. Pointing to the photograph, Vipul said, "She is the daughter of my grandfather's only son." How is Vipul related to the girl in the photograph ?
A. Mother   B. Sister
C. Cousin   D. Grandmother

Answer B

169. Complete the series 2,2,5, 13,28,....
A. 50   B. 51
C. 52   D. 53

Answer C

170. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?

Answer D

A. 159   B. 194
C. 205   D. 209

171. If the ratio of the diameters of two spheres is 3 : 5, then What is the ratio of their surface areas?

Answer A

A. 9 : 25   B. 9 : 10
C. 3 : 5   D. 27 : 125

172. As 'Furniture' is related to 'Bench' in the same way 'Stationary' is related to what?

Answer C

A. Godown   B. Room
C. Pen   D. Chair

173. Look at this series: 7, 10, 8, 11, 9, 12, ... What number should come next?

Answer B

A. 7   B. 10
C. 12   D. 13

174. Select the alternative in which the specified components of the key figure (X) are found.

A. 1   B. 2
C. 3   D. 4

Answer B

175. In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together?

Answer C

A. 360   B. 480
C. 720   D. 5040

176. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through.

Answer C

A. 145°   B. 150°
C. 155°   D. 160°

177. Choose the number from the given answers to replace the question mark?
240, ?, 120, 40, 10, 2.

Answer B

A. 480   B. 240
C. 180   D. 420

178. Look at this series: 80, 10, 70, 15, 60, ... What number should come next?

Answer A

A. 20   B. 25
C. 30   D. 50

179. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?

Answer C

A. 1/10   B. 2/5
C. 2/7   D. 5/7

---

180. 1 quarter Kg of potatoes cost 60 paise. Calculate the cost of 200 grams.

A. 48 paise   B. 62 paise
C. 54 paise   D. 26 paise

Answer A

Explanation: Let 200 gm potato cost X paise
According to question, Cost of 1/4 Kg potato = 60 Paise
=> Cost of 250 gm potato = 60 Paise, => 1 Kg = 1000 gm , => 1/4 Kg = 1000/4 gm = 250 gm
By direct proportion, more quantity, more cost –200 grams : 250 grams = X : 60
=> 200*60 = 250 X, => 12000 = 250 X, => X = 48 => Thus, the cost of 200 grams is 48 paise.

181. Aman invests Rs. 8000 at some rate of interest. Being simple interest the money doubles in 5 years. Raj sees this and invests Rs. 6250 for 3 years at same rate of interest. How much interest does Raj get?

A. Rs. 3750   B. Rs. 6250
C. Rs. 3125   D. Rs. 4250

Answer A

Explanation: The money doubles
–Simple interest after 5 years = Principle = R 8000

Simple Interest =SI = $\dfrac{PRT}{100}$ Where, P = Principal, R= Rate of interest, T = time period

$8000 = \dfrac{8000 \times 8 \times 5}{100}$ R = 20% H

=> Now, Raj will get, SI = $\dfrac{6250 \times 20 \times 3}{100}$ Rs. = 3750.

182. Guddi invested some money in a bank at rate of 6% per annum. At simple interest, after 9 yrs, she got Rs. 8470. How much did she invest?

A. Rs. 5250   B. Rs. 6550
C. Rs. 6400   D. Rs. 5500

Answer D

Explanation : Amount = Principal + Simple Interest

Simple Interest =SI = $\dfrac{PRT}{100}$

Where, P = Principal, R= Rate of interest, T = time period

$8470 = P + \dfrac{P \times 6 \times 9}{100}$

=> 8470 x 100 = 154P, =>R = 10% = Rate of Interest
=> 220= 10R+ 12R , =>P = Rs. 5500 = Amount invested by Guddi

183. At what price should the Karan mark a sewing machine that costs him Rs. 1200/- so that even after offering a 20% discount, he makes 25% profit?

A. Rs. 2,025/-   B. Rs.1,900/-
C. Rs. 1,675/-   D. Rs. 1,875/-

Answer D

Explanation: Cost of a sewing machine = Rs. 1200/-
By giving 20% discount on the marked price of a sewing machine, the cost price is :
100/80 * 1200 = Rs. 1500/–By making a profit of 25% on the cost price of a sewing machine, the marked price of the sewing machine is: 125/100 × 1500 = 125 × 15 = Rs. 1,875/-

184. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men & 3 women?

A. 63   B. 90
C. 126   D. 45

185. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even ?

A. 3/4
B. 1/4
C. 7/4
D. ½

Answer A

186. If 'A'=26, and SUN = 27, then CAT?

A. 24
B. 57
C. 58
D. 27

Answer B

187. Look at this series: 2, 6, 18, 54, ... What number should come next?

A. 108
B. 148
C. 162
D. 216

Answer 'C

188. There are six persons Ashwin, Kiran, Komal, Dipen, Esha and Mittal. Komal is the sister of Mittal. Kiran is the brother of Esha's husband. Dipen is the father of Ashwin & grandfather of Mittal. There are two fathers, three brothers and a mother in the group. Who is the mother?

A. Ashwin
B. Kiran
C. Komal
D. Esha
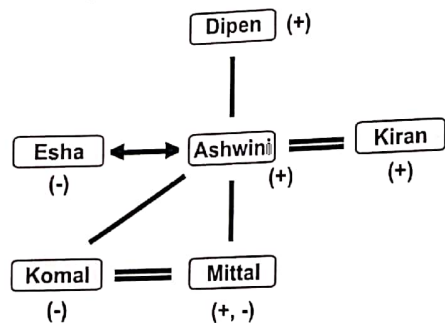
Answer D

Dipen is father of Ashwin and grandfather of Mittal.
So, Ashwin is father of Mittal.
Thus. Dipen and Ashwin are the two fathers.
Komal is the sister of Mittal.
So, Komal is the daughter of Ashwin.
Since there is only one mother, it is evident that Esha is the wife of Ashwin and hence the mother of Komal and Mittal.
So, Kiran is brother of Ashwin.
Clearly, Ashwin is Esha's Husband. **=> So, Answer is Esha.**

189. In how many ways can we arrange the word 'FUZZTONE' so that all the vowels come together?

A. 1440
B. 6
C. 2160
D. 4320

Answer C

Explanation:

There are 3 vowels (U, E and O) which can be arranged in **3! Ways.**
Let the vowels be one group.
So, now we have (8-3=) 5 characters + 1 group = 6
This can be arranged in 6! Ways.
But the alphabet Z is twice so we need to divide by 2!
That gives us $\frac{6!}{2!}$, Total ways to arrange the letters = 3! X $\frac{6!}{2!}$ = 3 x 720 = 2160

190. 3 pipes have diameters 2cms, 3cms and 4cms. The ratio of water flowing through them is equal to ratio of the square of their diameters. The biggest pipe when open alone, can fill the entire pool in just 126 minutes. When all the pipes are opened together, the pool would be filled in how much time?

A. 2016/29 minutes
B. 2111/126 minutes
C. 215/63 minutes
D. 155 minutes

Answer A

Explanation:

Ratio of square of diameter of pipes = Ratio of Water flowed ⟶ Given

But, Water flow $\dfrac{1}{\text{Time taken Time taken}}$ => $(d)^2 \dfrac{1}{\text{Time taken Time taken}}$

=> If diameter becomes ½ i.e. 4 cms to 2 cms, time needed becomes (2^2) = 4 times.
For diameter 4 cms, time needed is 126 minutes.

So for 2 crns diameter time needed 126 x 4 = 504 minutes
If diameter becomes 3 cms from 2 cms it means It increases by 1.5 times.

Time taken by pipe of diameter 3 cm = $\dfrac{504}{(1.5)^2}$ = 224 minutes

When all 3 pipes are opened, in 1 min they fill how much of the pool?

It is given by = $\dfrac{1}{126} + \dfrac{1}{504} + \dfrac{1}{224}$

Making denominators common, we get = $\dfrac{1 \times 16}{126 \times 16} + \dfrac{1 \times 4}{504 \times 4} + \dfrac{1 \times 9}{224 \times 9} = \dfrac{29}{2016}$

So, the entire pooi Is filled in $\dfrac{2016}{29}$ **minutes**

191. Two pipes M and N can fill a tank in 22 hours and 33 hours respectively. In how much time will the tank be full, if both the pipes are opened simultaneously?

A. 18 hours
B. 19/22 hours
C. 1(1/11) hours
D. 13(1/5) hours

Answer D

Explanation:

Tank filled or work done by M in 1 hr = $\dfrac{1}{22}$, Tank filled or work done by N in 1 hr = $\dfrac{1}{33}$

Tank filled or work done **by both in 1 hour =** $\dfrac{1}{22} + \dfrac{1}{33} = \dfrac{5}{66}$

So the entire tank is full in $\dfrac{66}{5} = 13\dfrac{66}{5}$ hours

Tip :
if a completes $\dfrac{1}{n}$ amount of work in 1 day. he completes entire work in 'n' days.

192. Find the area of the square field if a train 800 metres long passes the field with a speed of 120 kmph in one minute.

A. 1.44 sq. km
B. 4 sq. km
C. 2 sq. km
D. 2.64 sq. km

Answer A

Explanation: 120 km/hr = 120 * 5/18 = 33.33 m/s,
v = d/t ; 33.33 = d/60, => d = 2000 m
Hence, in one minute the train travels 2000 m. But, as the train is 800 m long and it passes the field, the length of the field is 2000 – 800 = 1200 m.
Area = 1200 * 1200 **=> 1.44 sq. km.**

199

193. A milkman had water and milk mixture in a can with water to milk ratio 5:7. He accidently spills 9 liters of the mixture. He then fills the can with water equal in quantity to spilled mixture. This makes the water to milk ratio 9:7. How much milk did the can initially have?

A. 21 liters
C. 16 liters
B. 24 liters
D. 20 liters

Answer | **A**

Explanation:

Approach 1- Direct Solving
Here milk : water = 7:5 That means quality of milk mu be 7 or multiple of 17 Only option A i.e. 21 is multiple 17. You can check by putting 21 as quantity of milk

Approach 2- By solving
Water to Milk = 5:7
Let common factor be K. so water = 5K liters and Milk = 7K liters
Now, when we remove 9 liters mixture,

Milk removed = $\frac{7}{7+5} \times 9 = 5.25$

Water removed = $\frac{5}{7+5} \times 9 = 3.75$

Now, 9 liter water is added,
So Water quantity = 5K–3.75+9 = 5K + 5.25
Milk quantity = 7K –5.25

And, $\frac{\text{Water quantity}}{\text{Milk quantity}} = \frac{9}{7}$

$\frac{5K + 5.25}{7K - 5.25} = \frac{9}{7}$ => K = 7k = 3

=> Amount of milk initially = 7k = 7x3 = **21 liters**

194. A solution of honey and water is 28 litres, with honey and water in ratio 4:3. To this a 21 litre honey-water solution is added that has honey to water ratio as 2:1. Again a 51 litre honey-water solution that has honey to water ratio as 9:8 is added to this. After this 10 litre of the solution is replaced with pure honey. What is ratio of water to honey in the final mixture?

A. 613:387
C. 72:24
B. 15:12
D. 387:613

Answer | **D**

Explanation:

In 28 liters	In 218 liters	In 51 liters
Honey : water = 4:3	Honey : water = 2:1	Honey : water = 9:8

=> 28/(4+3) = 28/7 = 4
=> Honey = 4x4 = 16 liters => Honey = 2x7 = 14 liters => Honey = 9x3 = 27 liters
Water= 3x4 = 12 liters   Water= 1x7 = 7 liters   Water= 9x3 = 27 liters
Total Honey = 16 + 14 + 27 = **57**, **Total Water** = 12 + 7 + 24 = **43** => Honey : water = 57:43
Total solution quantity = 57+43 = 100
Out of 100 we are removing 10 litre (i.e. 10%)
so proportionately from honey we will remove 10% = remove 5.7
& proportionately from water we will remove 10% = remove 4.3
Also, we add 10 litre pure honey
So now honey = 57 –5.7+ 10 = 61.3 & Water = 43 –4.3 = 38.7
=> Water : Honey = 38.7 : 61.3 = **387 : 613**

195. If the population of a city increases by 5 % annually, what will be the population of the city in 2 years time if its current population is 78000?

A. 81900
C. 85800
B. 85995
D. 90000

Answer | **B**

Explanation: The % change in population of city in two years time is 1.05*1.05 = 1.1025 = 10.25%
Therefore, after 2 years the population of the city will be 1.1025 * 78000 = 85995

196. For a candidate to clear an examination, he/she must score 55% marks. If he/she gets 120 and fails by 78 marks, the total marks for the examination is

A. 300
C. 400
B. 360
D. 320

Answer | **B**

Explanation: Here the mark obtained by the candidate is 120 and the candidate fails by 78 marks.
Therefore the passing marks is (120+78) = 198 => Let the total marks be x, => 55/100 * x = 198
=> Hence x = 360

197. In a class, 20% of the students were absent for an exam. 30% failed by 20 marks and 10% just passed. Find the average score of the class if the remaining students scored an average of 65 marks and the cut off for passing the exam is 40.

A. 45
C. 36
B. 49
D. 40

Answer | **C**

Explanation: Let total students be 100.
=> Hence, marks of 20 students is 0 as they were absent.
=> 30 students scored 20 marks (as they failed by 20 marks)
=> 10 students scored 40 marks (just passed)
=> 40 students scored 65 marks (average of 65)
=> Therefore, average score of the class is: (0 + 600 + 400 + 2600)/100 = 3600/100
=> 36

198. It was intended that Rs. 585 be divided among P, Q and R in the ratio of 4 : 3 : 2, but by mistake the distribution was made in the proportion of 1/4 : 1/3 : 1/2. How much does 'R' gain by the error ?

A. Rs. 99
C. Rs. 140
B. Rs. 126
D. Rs. 152

Answer | **B**

Explanation: Total amount = Rs. 585
on dividing it in the ratio of 4 : 3 : 2,   => Share of P = 4/9 * 585 = Rs. 260
Share of Q = 3/9 * 585 = Rs. 195,   => Share of R = 2/9 * 585 = Rs. 130
But the amount has been divided in the proportion of 1/4 : 1/3 : 1/2 i.e. 3 : 4 : 6
Share of P = 3/13 * 585 = Rs. 135,   => Share of Q = 4/13 * 585 = Rs. 180
Share of R = 6/13 * 585 = Rs. 270,
=> Therefore, gain for R by virtue of error   => Rs. 270 – Rs. 130 = Rs. 140

199. Raj can build a house alone in 16 days but Suraj alone can build it in 12 days. Raj and Suraj work on alternate days. If Raj works on first day, the house will be built in how many days?

A. 12.5 days
C. 48/7 days
B. 13(3/4) days
D. 24/7 days

Answer | **B**

Explanation:
This sum is very easy to understand and solve

In 1 day Raj does $\frac{1}{16}$ amount of work, In 1 day Suraj does $\frac{1}{12}$ amount of work
First day Raj works and Second day Suraj.

So in 2 days, Work done $\frac{1}{16} + \frac{1}{12} = \frac{7}{48}$ amount is work

So in 12 days (i.e. 6 times 2 days) work done = $6 \times \frac{7}{48} + \frac{42}{48} = \frac{7}{8}$

Remaining work $\frac{1}{8}$

Now, on 13th day, Raj will work and complete $\frac{1}{16}$ amount of work

Now, work remaining = $\frac{1}{8} - \frac{1}{16} = \frac{7}{16}$

We know that In 1 day Suraj will complete $\frac{1}{12}$ amount of work $\frac{1}{12} > \frac{1}{16}$

Now let's find out how much is 1/16th of 1/12th

Let's start with the fractions given in options

200. A can complete a work in 12 days and B can complete in 8 days. A works for 8 hours every day while B works for 10 hours every day. If A and B together start working 8 hours per day, in how many days will they complete the work?

A. 8 days
B. 60/11 days
C. 39/12 days
D. 15/8 days

Answer	B

Explanation:

A completes the work in 12 days at 8 hour per day = 12 x 8 = 96 hours

In 1 hour, A completes $\frac{1}{96}$ amount of work

B completes the work in 8 days at 10 hour per day = 8 x 10 = 80 hours

In 1 hour, B completes $\frac{1}{80}$ amount of work

Working together, in 1 hour A and B complete $\frac{1}{96} + \frac{1}{80} = \frac{11}{480}$ amount of work

So they complete entire work in $\frac{480}{11}$ hours.,

Since they work for 8 hours per day, they need $\frac{480}{11} \times \frac{1}{8} = \frac{60}{11}$ days

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MOCK TEST - 10
MATHS MOCK TEST

Marks: 50

1. What is the possibility of having 53 Thursdays in a non-leap year?

A. $\frac{6}{7}$
B. $\frac{1}{7}$
C. $\frac{1}{365}$
D. $\frac{53}{365}$

Answer	B

Explanation:
A non-leap year has 365 days,
which has 52 weeks (364 days) means 52 Thursdays.
Thus there is just 1 day extra.
We want it to be Thursday.
Total possibility are 7 (Sunday to Saturday means 7 days)
∴ Probability of 53 Thursday = 1/7

$$Probability = \frac{What\ we\ want}{Total}$$

OR = add   AND = multiply

2. A box has 5 black and 3 green shirts. One shirt is picked randomly and put in another box. The second box has 3 black and 5 green shirts. Now a shirt is picked from second box. What is the probability of it being a black shirt?

A. $\frac{4}{9}$
B. $\frac{29}{72}$
C. $\frac{8}{72}$
D. $\frac{3}{16}$

Answer	B

Explanation:

$$\therefore Probability = \frac{What\ we\ want}{Total}$$

OR = add   AND = multiply

From box 1 we can pick black or green shirt
Case 1: - Pick black shirt
Box 1 has total 5+3 = 8 shirt
Probability of black from box 1 = $\frac{5}{8}$, Now this black is added to box 2.

So box 2 now has (3+1=) 4 black & 5 green shirts, Total = 4+5 = 9 shirts

Probability of black from box 2 = $\frac{4}{9}$, Case 1 probability = $\frac{5}{8} \times \frac{4}{9} = \frac{20}{72}$

OR
Case 2 :- Pick green shirt
Probability of green is added to box 2
So box 2 now has 3 black & (5+1=) 6 green shirts
Total = 3+6 = 9 shirts

Probability of black from box 2 = $\frac{3}{9}$, Case 2 Probability = $\frac{3}{8} \times \frac{3}{9} = \frac{9}{72}$

Total probability = $\frac{20}{72} + \frac{9}{72} = \frac{29}{72}$

3. Simplify $(x - 9)(x + 10) / (x^2 - 81)$
A. $(x^2 + x - 90) / (x^2 - 81)$
B. $(x + 10) / (x - 9)$
C. $(x + 10) / (x + 9)$
D. None of the above

Answer C

4. Simplify $(3x / 2y)(x / 3y)$
A. $x / 2y$
B. $(3x^2) / (2y^2)$
C. $x^2 / (6y^2)$
D. $x^2 / (2y^2)$

Answer D

5. Simplify $(1 / (x^2 - 1)) \div (1 / (x + 1))$
A. $1 / (x - 1)$
B. $1 / (x + 1)$
C. $1 / (x2 - 1)$
D. None of the above

Answer A

6. Simplify $(1 / s) - (1 / t)$
A. $(s - t) / st$
B. $(t - s) / st$
C. 0
D. $1 / (s - t)$

Answer B

7. If $a, b \in (0, 2)$ and the equation $\frac{x^2 + 5}{2} = x - 2\cos(ax + b)$
has at least one solution then $a + b$ is

Answer D

A. 1
B. 2
C. e
D. π

8. If expression $x^2 - 4cx + b^2 > 0 \; \forall \; x \in R$ and $a^2 + c^2 < ab$, then range of the
function is $\frac{x + a}{x^2 + bx + c^2}$

Answer C

A. $(-\infty, 0)$
B. $(0, \infty)$
C. $(-\infty, \infty)$
D. None of these

9. The value of $\dfrac{(361)^3 + (139)^3}{(361)^2 - 361 \times 139 + (139)^2}$ = ?

Answer B

A. 300
B. 500
C. 400
D. 600

10. The set of all Equivalence classes of a set A of cardinality C
A. forms a partition of A
B. is of cardinality 2C
C. has the same cardinality as A
D. none of these

Answer A

11. 12 spheres of the same size are made from melting a solid cylinder of 16 cm diameter and 2 cm height. Find the diameter of each sphere.
A. 4 cm
B. 6 cm
C. 8 cm
D. 10 cm

Answer A

12. Rational number is represented by .
A. N
B. Z
C. R
D. Q

Answer C

13. If A_m represents the area bounded by the curve $y = \ln x^m$, the x-axis and the lines $x = 1$ and $x = e$, then $A_n + m A_{n-1}$ is.
A. m
B. m^2
C. $m^2/2$
D. $m^2 - 1$

Answer B

14. In how many ways can the letters of the word 'LEADER' be arranged?
A. 72
B. 144
C. 360
D. 720

Answer C

15. In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together?
A. 120
B. 720
C. 4320
D. 2160

Answer B

16. Given A = 265 and B = (264+263+262+...+20), which of the following is true?
A. B is 264 larger than A
B. A and B are equal
C. B is larger than A by 1
D. A is larger than B by 1

Answer C

17. A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is.
A. 4
B. 5
C. 6
D. 10

Answer B

18. A boat covers a certain distance downstream in 1 hour, while it comes back in 1 hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?
A. 12 kmph
B. 13 kmph
C. 14 kmph
D. 15 kmph

Answer B

19. How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?
A. 5
B. 10
C. 15
D. 20

Answer D

20. Which of the following is a prime number ?
A. 33
B. 81
C. 97
D. 93

Answer C

21. If the number 481 * 673 is completely divisible by 9, then the smallest whole number in place of * will be.
A. 7
B. 5
C. 6
D. 2

Answer A

22. A bundle of 10 balloons has string of 35 cm attached to it and makes and elevation angle of 40°. distance of balloons from holders hand is
A. 38.50 cm
B. 25.50 cm
C. 22.50 cm
D. 32.50 cm

Answer C

23. Consider a right angle triangle PQR, if PQ is 27 and QR is 17 then value of angle P is
A. 32.19°
B. 45.19°
C. 49.58°
D. 62.46°

Answer A

24. The polynomial $px^2 + qx + rx^4 + 5$ is of type
A. linear
B. quadratic
C. cubic
D. Biquadratic

Answer D

25. In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women?
A. 63   B. 90
C. 126   D. 45

Answer A

26. The largest 4 digit number exactly divisible by 88 is:
A. 9944   B. 9768
C. 9988   D. 8888

Answer A

27. On dividing a number by 5, we get 3 as remainder. What will the remainder when the square of the this number is divided by 5 ?
A. 0   B. 1
C. 2   D. 4

Answer D

28. What is the sum of all 3 digit numbers that leave a remainder of '2' when divided by 3?
A. 897   B. 1,64,850
C. 1,64,749   D. 1,49,700

Answer C

29. In how many different ways can the letters of the word 'MATHEMATICS' be arranged so that the vowels always come together?
A. 10080   B. 4989600
C. 120960   D. None of these

Answer C

30. In a throw of coin what is the probability of getting head.
A. 1   B. 2
C. $\frac{1}{2}$ D. 0

Answer C

31. Find the surface area of a 10cm*4cm*3cm brick.
A. 154 cm²   B. 156 cm²
C. 160 cm²   D. 164 cm²

Answer D

32. Find the compound interest on Rs. 7500 at 4% per annum for 2 years, compounded annually.
A. Rs. 610   B. Rs. 612
C. Rs. 614   D. Rs. 616

Answer B

33. $2 + 2 - 2 \times 2 \div 2 = ?$
A. 0   B. 1
C. 2   D. 4

Answer C

34. $(2,6) \div (4,2) = ?$
A. (1,1)   B. (1,2)
C. (2,1)   D. (2,2)

Answer A

35. Which numbers appear in Don Brown's best selling novel 'The Da Vinci Code'?
A. Fermat number   B. Fibonacci number
C. Lucas number   D. Golden number

Answer B

36. What does D represent in Roman numeral system?
A. 100   B. 500
C. 1,000   D. 50

Answer B

37. If A and B are matrices, then which from the following is true ?
A. $A + B \neq B + A$ B. $(At)t \neq A$
C. $AB \neq BA$ D. all are true

Answer C

38. What is the sum of the first 100 odd numbers?
A. 9,000   B. 10,000
C. 11,000   D. 12,000

Answer B

39. Numbers having positive or negative sign is called.
A. Positive number   B. Directed number
C. Scalar   D. Prime

Answer B

40. Which of these could be either a circumference divided by π or a song written & recorded by David Bouie?
A. The Tangents   B. John of Arc
C. In search of last chord   D. The width of a circle

Answer B

41. Area bounded by the curves $y = x^2 + 2$, $y = -x$, $x = 0$ and $x = 1$ is
A. $\frac{17}{2}$ B. $\frac{17}{6}$
C. $\frac{19}{6}$ D. $\frac{13}{6}$

Answer B

42. The slope of the tangent to a curve $y = f(x)$ at $(x, f(x))$ is $2x + 1$'. If the curve passes through the point (1, 2), then the area of the region bounded by the curve, the x-axis & the line $x = 1$ is:
A. $\frac{1}{6}$ B. 6
C. $\frac{5}{6}$ D. $\frac{6}{5}$

Answer B

43. An integer that is divisible by 2 is called.
A. Even number   B. Natural number
C. Odd number   D. Whole number

Answer A

44. Number of subsets of a set of order three is.
A. 2   B. 4
C. 6   D. 8

Answer D

45. $4/11 = 0.2222$ is example of
A. quadratic fraction
B. terminating decimal fraction
C. non-terminating decimal fraction
D. linear fraction

Answer C

46. The number of times 2 is used while writing the numbers from 1 to 100 is.
A. 19   B. 18
C. 21   D. 20

Answer D

47. $(16)^{3/4}$ is equal to
A. 2   B. 4
C. 8   D. 16

Answer C

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48. If roots of $x^2 - 5x + a = 0$ are equal, then $a =$

A. 25/5   B. ±25/4
C. 25/4   D. None of Above

Answer C

49. In a drawer there are 4 white socks, 3 blue socks and 5 grey socks. Two socks are picked randomly. What is the possibility that both the socks are of same color?

A. $\frac{4}{11}$ B. 1

C. $\frac{2}{33}$ D. $\frac{19}{66}$

Answer D

Explanation: Probability = $\frac{\text{What we want}}{\text{Total}}$

OR = add   AND = multiply

Total socks = 4+3+5 = 12
We want same color socks
So we want, 2white OR 2 blue OR 2 grey socks
For White : −
Probability of 1st sock being white = $\frac{4}{12}$, Probability of 2nd sock being white = $\frac{3}{11}$

White Probability = $\frac{4}{12} \times \frac{3}{12} = \frac{1}{11}$, Blue Probability = $\frac{3}{12} \times \frac{2}{11} = \frac{1}{22}$

Similarly,

Grey Probability = $\frac{5}{12} \times \frac{4}{11} = \frac{5}{33}$, Total Probability = $\frac{1}{11} + \frac{1}{22} + \frac{5}{33} = \frac{19}{66}$

50. In a drawer there are 5 black socks and 3 green socks. Two socks are picked randomly one after the other without replacement. What is the possibility that both the socks are black?

A. $\frac{5}{14}$ B. $\frac{5}{8}$

C. $\frac{3}{8}$ D. $\frac{5}{16}$

Answer A

Explanation: Probability = $\frac{\text{What we want}}{\text{Total}}$ OR = add   AND = multiply

Number of Black socks = 5, Total socks = 5+3 = 8
First we draw one sock.
Probability of it being black = $\frac{5}{8}$,
Now a second sock is picked
Probability of it being black = $\frac{4}{7}$, Total Probability = $\frac{5}{8} \times \frac{4}{7} = \frac{5}{14}$

51. Increasing force tends to _____ while increasing mass tends to.

A. Increase acceleration, decrease acceleration
B. Increase acceleration, increase acceleration
C. Decrease acceleration, increase acceleration
D. Decrease acceleration, decrease acceleration

Answer A

52. A rotary converter operates at a.

A. low power factor   B. high power factor
C. zero power factor   D. none of the above

Answer B

53. Which of the following is equivalent to the unit "candela"?

A. lumen/m²   B. footcandle/steradian
C. lux/steradian   D. lumen/steradian

Answer D

54. A rotating body has kinetic energy. This statement is.

A. sometimes true   B. sometimes false
C. always true   D. always false

Answer C

55. Semi conductor is defined as.

A. one which conducts only half of the applied voltage
B. A material whose conductivity is same as between that of a conductor and an insulator
C. A material made of alternate layers of conducting material and insulator
D. A material which has conductivity having average value of conductivity of metal and insulator

Answer B

56. The Ohm's law condition is.

A. Temperate at positive end should be more than the temperature at negative end
B. current should be proportional to the size of resistance
C. resistance must be wire wound type
D. resistance must be uniform

Answer D

57. which one will be true for an incandescent bulb, if its resistance changes with the change of applied voltage.

A. The internal inductance of the bulb causes this change
B. The bulb is said to have a low ionization potential
C. The bulb has constant resistance
D. This bulb is non-linear device

Answer D

58. When a n-p-n transistor is used as an amplifier then ?

A. the electrons flow from emitter to collector
B. the holes flow from emitter to collector
C. the electrons flow from collector to emitter
D. the electrons flow from battery to emitter

Answer A

59. Capacitance increases with
A. increase in plate area and decrease in distance between the plates
B. increase in plate area and distance between the plates
C. decrease in plate area and value of applied voltage
D. reduction in plate area and distance between the plates

Answer A

60. In a capacitive circuit
A. a steady value of applied voltage causes discharge
B. an increase in applied voltage makes a capacitor charge
C. decrease in applied voltage makes a capacitor charge
D. none of the above

Answer A

61. The wavelength of the visible light is ___.
A. $4 \times 10^{(-7)}$ to $8 \times 10^{(-7)}$ m
B. 4×10^7 to 8×10^7 m
C. $4 \times 10^{(-7)}$ to $8 \times 10^{(-7)}$ Å
D. 4×10^7 to 8×10^7 Å

Answer B

62. We can see objects because of ___
A. reflection
B. refraction
C. transmission
D. diffraction

Answer A

63. The image formed by a convex mirror is always ___
A. real
B. enlarged
C. virtual and enlarged
D. diminished

Answer A

64. As you move an object away from a convex mirror, its image becomes ___ and moves towards ___
A. smaller, infinity
B. smaller, focus
C. enlarged, infinity
D. enlarged, focus

Answer D

65. Image formed by a concave mirror is erect and enlarged. What is the position of the object?
A. Between focus F and the center of curvature
B. At the center of curvature
C. Beyond the center of curvature
D. Between pole and the focus

Answer D

66. Isotopes have same number of protons but different number of
A. electrons
B. neutrons
C. shells
D. positrons

Answer B

67. Number of protons inside nucleus represents
A. atomic mass
B. atomic number
C. atomic count
D. radioactivity level

Answer B

68. Mass of neutron and proton is
A. equal
B. unequal
C. zero
D. undetermined

Answer A

69. Frequency below which no electrons are emitted from metal surface is
A. minimum frequency
B. angular frequency
C. maximum frequency
D. threshold frequency

Answer D

70. Energy absorbed by electron is used in
A. escaping the metal
B. increasing kinetic energy
C. both A and B
D. increasing frequency

Answer C

71. How does a semiconductor behave at absolute zero?
A. Conductor
B. Insulator
C. Semiconductor
D. Protection device

Answer B

Explanation: A semiconductor is a solid which has the energy band similar to that of the insulator. It acts as an insulator at absolute zero.

72. Semiconductor acts as an insulator in the presence of impurities. True or false?
A. True
B. False

Answer B

Explanation: When the temperature is raised or when impurity is added, their conductivity increases. Conductivity is inversely proportional to temperature.

73. How is the resistance of semiconductor classified?
A. High resistance
B. Positive temperature co-efficient
C. Negative temperature co-efficient
D. Low resistance

Answer C

Explanation: Semiconductors have negative temperature co-efficient. The reason for this is, when the temperature is increased, a large number of charge carriers are produced due to breaking of covalent bonds and hence these electrons move freely and gives rise to conductivity.

74. What are the charge carriers in semiconductors?
A. Electrons and holes
B. Electrons
C. Holes
D. Charges

Answer A

Explanation: In conductors, electrons are charge carriers. But in semiconductors, both electrons and holes are charge carriers and will take part in conduction.

75. The sparking between two electrical contacts can be reduced by inserting a
A. capacitor in parallel with contacts
B. capacitor in series with each contact
C. resistance in line
D. none of the above

Answer A

76. Which of the following statements is incorrect ?
A. The leakage resistance of ceramic capacitors is generally high
B. The stored energy in a capacitor decreases with reduction in value of capacitance
C. The stored energy in a capacitor increases with applied voltage
D. A wire cable has distributed capacitance between the conductors

Answer B

77. Ethanol has boiling point of
A. 38 degree Celsius
B. 65 degree Celsius
C. 67 degree Celsius
D. 78.25 degree Celsius

Answer D

78. In London dispersion forces dipole which is created, is
A. temporary
B. permanent
C. weak
D. strong

Answer A

79. A concave mirror gives real, inverted and same size image if the object is placed
A. At F
B. At infinity
C. At C
D. Beyond

Answer C

80. The image produced by a concave lens is.
A. always virtual and enlarged
B. always virtual and reduced in size
C. always real
D. sometimes real, sometimes virtual

Answer B

81. The radius of curvature of a mirror is 20cm the focal length is.
A. 20cm
B. 10cm
C. 40cm
D. 5cm

Answer B

82. What kind of lens is used by short-sighted persons?
A. convex
B. concave
C. cylindrical
D. compound

Answer B

83. The NOR gate output will be high if the two inputs are.
A. 00
B. 01
C. 10
D. 11

Answer A

84. The optical phenomena, twinkling of stars, is due to.
A. Atmospheric reflection
B. Total reflection
C. Atmospheric refraction
D. Total refraction

Answer C

85. The code where all successive numbers differ from their preceding number by single bit is.
A. Binary code
B. BCD
C. Excess 3
D. Gray

Answer D

86. Suppose you are standing 1 m in front of a plane mirror. What should be the minimum vertical size of the mirror so that you can see your full image in it?
A. 0.50 m
B. 2 m
C. half of your height.
D. twice your height.

Answer C

87. At low temperature, the semi conductor behaves as a.
A. Perfect insulator
B. Perfect conductor
C. Perfect consulator
D. None of these

Answer B

88. If an input signal ranges from 20–40 A (microamps), with an output signal ranging from .5–1.5 mA (milliamps), what is the ac beta?
A. 0.05
B. 20
C. 50
D. 500

Answer C

89. The resistivity of pure germanium under standard conditions is about.
A. $6 \times 10^4 \, \Omega$ cm
B. $60 \, \Omega$ cm
C. $3 \times 10^6 \, \Omega$ cm
D. $6 \times 10^{-4} \, \Omega$ cm

Answer B

90. The atomic number of silicon and germanium is.
A. 32, 14
B. 12, 19
C. 14, 32
D. 19, 12

Answer C

91. Velocity of bob in SHM becomes zero at.
A. mean position
B. in air
C. extreme position
D. middle of mean and extreme position

Answer C

92. A particle executes simple harmonic motion with an amplitude a. The period of oscillation is T. The minimum time taken by the particle to travel half of the amplitude from the equilibrium position is
A. T/12
B. T/8
B. T/4
C. T/2

Answer A

93. Which of the below mentioned statements is false regarding a p-n junction diode?
A. Diode are uncontrolled devices
B. Diodes are rectifying devices
C. Diodes are unidirectional devices
D. Diodes have three terminals

Answer D

94. Angular speed (ω) of a Second's Pendulum is.
A. equal to 2p
B. greater than p
C. less than p
D. equal to p

Answer D

95. A p-type semiconductor material is doped with _____ impurities whereas a n-type semiconductor material is doped with _____ impurities
A. acceptor, donor
B. acceptor, acceptor
C. donor, donor
D. donor, acceptor

Answer A

96. Total energy in a Damped Oscillations _____ with time.
A. Increases Linearly
B. Decreases Linearly
C. Increases Exponentially
D. Decreases Exponentially

Answer D

97. Which of the following is true in case of an unbiased p-n junction diode?
A. Diffusion does not take place
B. Diffusion of electrons & holes goes on infinitely
C. There is zero electrical potential across the junctions
D. Charges establish an electric field across the junctions

Answer D

98. The direction of linear velocity of body moving in a circle is.
A. along the axis of rotation
B. along the tangent
C. directed towards the center
D. directed away from the center

Answer B

99. A cube of material of side 1 cm has a resistance of 0.002 ohm between its opposite faces. if the same volume of the material has length of 8 cm and a uniform cross-section, the resistance of this length will be.
A. 0.032 ohm
B. 0.064 ohm
C. 0.096 ohm
D. 0.128 ohm

Answer B

100. According to the theory of relativity, which of the following always remains constant?
A. Length of an object
B. Time
C. Space
D. Velocity of light

Answer D

MOCK TEST - 10

CHEMISTRY MOCK TEST   Marks: 20

101. The most malleable metal is
A. platinum
B. silver
C. gold
D. iron

Answer   C

102. The most extensive, commercially useful source of thorium as monazite sand occurs in India at.
A. Orissa coast
B. Travancore coast
C. West Bengal coast
D. West Bengal coast

Answer   B

103. Epsom salt is chemically known as
A. copper sulphate
B. magnesium sulphate
C. ferrous sulphate
D. copper

Answer   B

104. Froth & Foams are examples of which of the following ?
A. solid suspended in gas
B. liquid suspended in gas
C. gas suspended in liquid
D. gas suspended in solid

Answer   C

105. Which of the following can be used for the denaturation of ethyl alcohol?
A. Methyl alcohol
B. Pyridines
C. Copper sulphate
D. All of above

Answer   D

106. Mizoroki-Heck reaction is catalyzed by which of the following metals?
A. Rhodium
B. Sodium
C. Palladium
D. Osmium

Answer   C

107. Which among the following is the most stable form of carbon under standard conditions?
A. Charcoal
B. Graphite
C. Diamond
D. Amorphous carbon

Answer   B

108. Which gas is used in fire extinguishers ?
A. Carbon dioxide
B. Nitrogen oxide
C. Carbon monoxide
D. Sulphur dioxide

Answer   A

109. Polyvinyl chloride, bakelite, nylon and orlon are examples of
A. Plastics
B. Synthetic fibres
C. Polymers of rubber
D. Resins

Answer   A

110. Bleaching powder contains
A. nitrogen
B. iodine
C. chlorine
D. bromine

Answer   C

111. Which of the primary component of natural gas?
A. Ethane
B. Propane
C. Methane
D. Butane

Answer   C

112. The first metal used by man was
A. iron
B. copper
C. gold
D. bronze

Answer   B

113. The method of concentrating the ore which makes use of the difference in density between ore and impurities is called.
A. liquation
B. leaching
C. levigation
D. magnetic separation

Answer   C

114. With what does a fuel mix in the carburettor of an engine?
A. Nitrogen
B. Hydrogen
C. Water
D. Air

Answer   D

115. Human bone does not contain.
A. calcium
B. carbon
C. oxygen
D. phosphorous

Answer   C

116. The most important ore of aluminium is
A. bauxite
B. magnetite
C. haematite
D. monazite

Answer   A

117. Maximum amount of a solid solute that can be dissolved in a specified amount of a given liquid solvent does not depend upon ?
A. Temperature
B. Nature of solute
C. Pressure
D. Nature of solvent

Answer   C

118. What is used to avoid melting of ice?
A. Gelatin
B. Butane
C. Methane
D. Any acid

Answer   A

119. What is a mixture of potassium nitrate powdered charcoal and sulphur called?
A. paint
B. aluminium
C. brass
D. gun powder

Answer   D

120. Which synthetic fibre is known as artificial silk?
A. Nylon
B. Rayon
C. Cotton
D. Terylene

Answer   B

MOCK TEST - 6

ENGLISH MOCK TEST   Marks: 40

Select the word which is the exact **OPPOSITE** of the given words. An antonym is a word that is the opposite meaning of another. It comes from the Greek words 'anti' for opposite and 'Antonym' for name.

121. The actor is well known both for his humility and courage.
A. pride   B. determination
C. honesty   D. gentleness

Answer | A

122. The General Manager is quite tactful and handles the workers union very effectively.
A. disciplined   B. naive
C. strict   D. loose

Answer | B

123. The error in the newspaper article is incidental.
A. intentional   B. conventional
C. usual   D. permissible

Answer | A

124. It is one of pernicious customs prevailing in the society.
A. permanent   B. beneficial
C. parochial   D. dangerous

Answer | B

Synonym is a word or phrase that means exactly or nearly the same as another word or phrase in the same language, for example shut is a synonym of close.

125. ABSTAIN
A. Refrain   B. Ingest
C. Take in   D. Consume

Answer | A

126. ACCORD
A. Confer   B. Refusal
C. Dissension   D. Opposition

Answer | A

127. IMPOST
A. Fertilizer   B. Coarse
C. Dispatch   D. Tax

Answer | D

128. INDICTMENT
A. Arraignment   B. Entrapment
C. Indoctrination   D. Inducement

Answer | A

One Word Substitution

129. A hater of learning and knowledge
A. Samaritan   B. Misogynist
C. Mascochist   D. Misologist

Answer | D

ENGLISH MOCK TEST - 10

130. A man with abnormal habits
A. Supercilious
B. Self Centred
C. Eccentric
D. Arrogant

131. Cynosure
A. One who always remains happy.
B. One who is not present.
C. One who is hated by everyone.
D. One who is centre of attraction.

Answer | C

132. Cynic
A. One who sneers at the beliefs of others.
B. One who appreciate.
C. One who is confused
D. One who is candidate for something.

Answer | D

Answer | A

Directions: Pick out the most effective word from the given words to ll in the blanks to make the sentence meaningfully complete.

133. We _____ read at least half of Shakespeare's comedies by the end of this year.
A. Will be   B. Will have
C. Will   D. Will have been

Answer | B

134. The hit TV serial Sherlock has ultimately boiled ____to a family drama and has disappointed many of its followers.
A. under   B. up
C. in   D. down

Answer | D

135. Several amendments were added to the club rules over the summer, but unfortunately_____ amendments did not promote inclusiveness.
A. a   B. an
C. the   D. is

Answer | C

136. That charming girl was the _____ of all eyes.
A. target   B. cynosure
C. doggerel   D. ambition

Answer | B

Error Detection
137.
A. Developmental activities of   B. the government come
C. to a standstill du   D. to paucity of funds.

Answer | B

Explanation: Developmental activities of the government have came to a standstill due to paucity of funds.

138.
A. I was surprised at not having   B. seen her even though
C. she was standing in front of me.   D. No Error

Answer | D

139.
A. If I fail in   B. this examination
C. I shall give   D. the next examination

Answer | C

Explanation: If I fail in this examination I shall take the next examination.

140.
A. It is undeniably true
B. that many amongst us
C. felt that
D. whole building is vibrating.

Answer: D

Explanation: It is undeniably true that many amongst us felt that whole building was vibrating.

Directions to Solve :-
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

141. work is the one thing
P : and without it
Q : that is necessary
R : to keep the world going
S : we should all die The Proper sequence should be:
A. QPSR
B. RPQS
C. SRPQ
D. QRPS

Answer: D

142. He was so kind and generous that
P : he not only
Q : made others do so
R : but also
S : helped them himself The Proper sequence should be:
A. PSRQ
B. SPQR
C. PRSQ
D. QPRS

Answer: A

143. This time
P : exactly what he had been told
Q : the young man did
R : beyond his dreams
S : and the plan succeeded The Proper sequence should be:
A. QPRS
B. QPSR
C. PQSR
D. QSRP

Answer: C

144. In the darkness
P : the long, narrow beard
Q : was clearly visible with
R : the tall stooping figure of the doctor
S : and the aquiline nose The Proper sequence should be:
A. RQPS
B. PSQR
C. RSQP
D. QPRS

Answer: A

Spelling test - find correct spelling:

145.
A. Campaegn
B. Cammpaign
C. Caampaign
D. Campaign

Answer: D

146.
A. Cannibale
B. Cannible
C. Cannibal
D. Cannebal

Answer: C

147.
A. Inequitous
B. Iniquitoes
C. Iniquitous
D. Iniquetous

Answer: C

148.
A. Isachromatic
B. Isochreomatic
C. Isochrometic
D. Isochromatic

Answer: D

Directions to Solve:
In the questions below the sentences have been given in Active/Passive voice. From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.

149. You should open the wine about three hours before you use it.
A. Wine should be opened about three hours before use.
B. Wine should be opened by you three hours before use.
C. Wine should be opened about three hours before you use it.
D. Wine should be opened about three hours before it is used.

Answer: D

150. They will inform the police.
A. The police will be informed by them.
B. The police will inform them.
C. The police are informed by them.
D. Informed will be the police by them.

Answer: A

151. They are going to build a new airport near the old one.
A. A new airport going to be built near the old one.
B. A new airport is being built near the old one.
C. A new airport will be built near the old one.
D. A new airport is going to be built near the old one.

Answer: D

152. She cannot manage the situation.
A. The situation cannot be managed by her.
B. The situation is unmanageable for her.
C. Her situation cannot be managed.
D. Managing the situation is not possible by her.

Answer: A

Change of Speech
153. The man said, "No, I refused to confers guilt."
A. The man emphatically refused to confers guilt.
B. The man refused to confers his guilt.
C. The man told that he did not confers guilt.
D. The man was stubborn enough to confers guilt.

Answer: A

154. Nita ordered her servant to bring her cup of tea.
A. Nita told her servant, "Bring a cup of tea."
B. Nita said, "Bring me a cup of tea."
C. Nita said to her servant, "Bring me a cup of tea."
D. Nita told her servant, "Bring her that cup of tea."

Answer: C

155. "Did you come from France"?, said Sara to boy.
A. Sara asked the boy if he had come from France.
B. Sara asked the boy if he come from France.
C. Sara asked the boy if he came from France.
D. Sara said the boy did he come from France.

Answer: A

156. They say, "We try to win each match".
A. They say that they tried to win the match.
B. They say that they try to win each match.
C. They say that we try to win each match.
D. They said that they try to won each match.

Answer	B

Directions to Solve:
In each question below, there is a sentence of which some parts have been jumbled up. Rearrange these parts which are labelled P, Q, R and S to produce the correct sentence. Choose the proper sequence.

157. As a disease
P : and breaks up marriages
Q : accidents and suicides
R : alcoholism leads to
S : affecting all ages
The Proper sequence should be:
A. SRPQ   B. RPSQ
C. SRQP   D. RQPS

Answer	C

158. It is easy to excuse
P : but it is hard
Q : in a boy of fourteen
R : the mischief of early childhood
S : to tolerate even unavoidable faults
The Proper sequence should be:
A. RPQS   B. QRSP
C. QRPS   D. RPSQ

Answer	D

159. I enclose
P : and the postage
Q : a postal order
R : the price of books
S : which will cover
The Proper sequence should be:
A. RPSQ   B. QSPR
C. QSRP   D. QPSR

Answer	C

160. We must read
P : if we want to absorb the fruits of great literature
Q : but with concentration
R : them not as we do cricket stories
S : undefined
The Proper sequence should be:
A. QPSR
B. PSQR
C. PRSQ
D. PRQS

Answer	A

161. Ramesh sets his grandfather's clock to the right time at 2.00 am on Thursday. But he didn't know that the clock gains 20s for every 3 hours. What will the clock indicate on Friday night 6.30 pm?
A. 6.32.00 pm   B. 6.32.46 pm
C. 6.38.56 pm   D. 6.34.30 pm

Explanation:

Answer	D

From 2.00 am Thursday to 6.30 pm Friday we have
24 hours (till 2 am Fri) + 12 hours (till 2 pm Fri) + 4.5 hours = 40.5 hours
20 seconds in 3 hours

=>? seconds in 40.5 hours
=>? 270 seconds = **4.5 minutes**
Time shown = 6:30 pm +4.5 minutes = 6 hours 34 minutes 30 seconds = 6.34.30 pm

162. At what time after 9 am, do hands of clock make a right angle?
A. At 32(8/11) minutes past 9 am   B. At 9 am
C. At 29(8/11) minutes before 10 am   D. At 3 pm

Explanation:

Answer	A

Tip:
In one hour, MINUTh hand travels 60 minutes
HOUR band travels just 5 minute spaces –**Thus:**
MINUTE hand gains (60-5) = 55 minutes over HOUR hand in 60 minutes

At 9 am hour hand and minute hand difference = 45 minutes
They already are at right angle. We want after 9 am.
For right angle, minute hand must be 15 minutes behind
For **15 minutes behind,** minute hand must travel (45-15) = **30 minutes more**
In 60 minutes, minute hand gains 55 min

In minutes it gains 30 minutes

$$=> = \frac{30 \times 60}{55} = 32\frac{8}{11} \text{ minutes past 9 am}$$

163. Tickets numbered 1 to 20 are mixed up & then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or5?

A. $\frac{1}{2}$
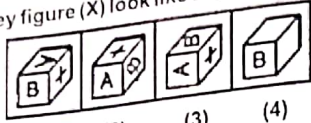
B. $\frac{2}{5}$

C. $\frac{8}{15}$

D. $\frac{9}{20}$

Answer	C

164. Find out how will the key figure (X) look like after rotation.

(X)

(1)   (2)   (3)   (4)

A. 1
B. 2
C. 3
D. 4

Answer **C**

---

165. The surface area of a sphere is same as the curved surface area of a right circular cylinder whose height and diameter are 12cm each. The radius of the sphere is.

A. 12cm
B. 3cm
C. 6cm
D. 4cm

Answer **C**

Explanation:

> **Tip:**
> Surface area of sphere = $4\pi r^2$, r= Radius
> Curved Surface Area of Cylinder = 2
> r−Radius and h −Height

=> Radius = Diameter/2 = 12/2 = 6cm

=> $4\pi r^2 = 2\pi \times 6 \times 12$

=> $r^2 = 36$

=> r = 6cm.

---

166. The area of the base of a right circular cone is 154cm² and its height is 14cm. Taking $\pi = 22/7$, the curved surface of the cone is

A. 154 x 5 cm²
B. 154 x 7 cm²
C. 11 cm²
D. 5324 cm²

Answer **A**

Explanation:

> **Tip :** Curved Surface Area of Cone = $\pi r l$
> r−Radius & L−Slant Height
> And L = $\sqrt{r^2 + h^2}$, Where, h = Height
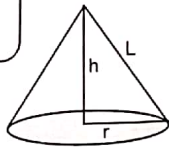
Area of base = $\pi r^2 = 154$,

=> $r^2 = \dfrac{154 \times 7}{22}$ => r = 7cm

Curved Surface Area of Cone = $\dfrac{22}{7} \times 7 \times \sqrt{7^2 + 14^2} = 22\sqrt{245}$

=> Area = $22\sqrt{49} \times 5 = 154\sqrt{5}$ cm²

---

167. It takes eight hours for a 600 km journey, if 120 km is done by train and the rest by car. It takes 20 minutes more, if 200 km is done by train and the rest by car. The ratio of the speed of the train to that of the cars is:

A. 2 : 3
B. 3 : 2
C. 3 : 4
D. 4 : 3

Answer **D**

---

168. Find odd one out. 41, 43, 47, 53, 61, 71, 73, 81

A. 61
B. 71
C. 73
D. 81

Answer **D**

---

169. If the areas of the three adjacent faces of a cuboidal box are 120cm², 72cm² and 60cm² respectively, find the volume of the box.

A. 7200 cm³
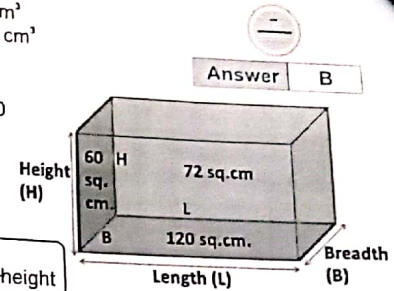B. 720 cm³
C. 864 cm³
D. (72)2 cm³

Answer **B**

Explanation:

Faces of cubes are rectangles.
=> Face 1 area = Length x Breadth = l x b = 120
Face 2 area = Length x Height = l x h = 72
Face 3 area = Height x Breadth = h x b = 60
=> lh x hb = 72 x 60 , => h² x lb = 72 x 60,
=> h² x 120 = 72 x 60
=> h = 6cm

> **Tip:**
> Volume of Cube =lbh , l−Length, b−Breadth, h−height

=> **Volume = lbh = 120 x 6 = 720 cm³**

---

170. A room is 6m long, 5m broad and 4m high. The maximum length of rod that can be kept in the room is
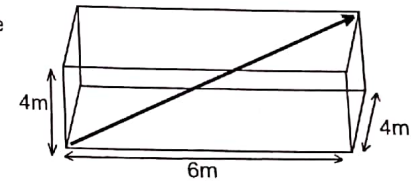
A. 61m
B. 16m
C. 36m
D. 77m

Answer **D**

Explanation:

Here the maximum possible length will be the diagonal length

> **Tip :**
> Diagonal of cuboid/room /tank/Box = $\sqrt{L^2 + B^2 + H^2}$
> L = Length; B = Breadth; H = Height

Maximum possible length of rod = $\sqrt[2]{6^2 + 5^2 + 4^2}$

---

171. What is 4th proportional in 9, 13 and 153?

A. 251
B. 181
C. 175
D. 221

Answer **D**

Explanation: In a : b :: c : d, 4 Proportional is d
a : b :: c : d can be written as = $\dfrac{a}{b} = \dfrac{c}{d}$

$d = \dfrac{c \times b}{a}$, Here, a : b :: c : d = 9 : 13 :: 153 : d

$\Rightarrow d = \dfrac{13 \times 153}{9} = 221$

---

172. Find odd one out. 1, 4, 9, 16, 23, 25, 36

A. 9
B. 23
C. 25
D. 36

Answer **B**

---

173. Which word does NOT belong with the others?

A. branch
B. dirt
C. leaf
D. root

Answer **B**

---

174. Find odd one out. 6, 9, 15, 21, 24, 28, 30

A. 28
B. 21
C. 24
D. 30

Answer **A**

175. Which word does NOT belong with the others?

A. tyre
B. steering wheel
C. engine
D. car

Answer D

176. In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?

A. 6.25
B. 6.5
C. 6.75
D. 7

Answer D

177. Jaggu set an alarm on his clock for Monday 11 am. He set his clock correctly on Sunday 1 am. He was unaware that the clock gains 20 min every 24 hours. When his alarm went off what was the actual time?

A. 28 minutes 20 seconds before 10 am
B. 28 minutes 20 seconds past 11 am
C. 31 minutes 40 seconds past 11 am
D. 31 minutes 40 seconds past 10 am

Answer D

Explanation:
From 1.00 am Sunday to 11 am Monday we have
24 hours (till 1 am Mon) + 10 hours = 34 hours
20 minutes gained in 24 hours

=> ? minutes gained in 34 hours
=> ? 28.333 minutes = 28 minutes 20 second
Alarm will go off at 11am
But actual time will be less than that bemuse clock had gained time.
=> Actual time = 11am −28 minutes 20 seconds = 31 minutes 40 seconds past 10 am.

178. Rohan was 4 times as old as his son 6 years ago. After 6 years Rohan will be twice as old as his son. What is son's present age?

A. 10 years
B. 12 years
C. 14 years
D. 18 years

Answer B

Explanation: Let son's age 6 years ago be X years. Then, Rohan's age 6 years ago = 4X years.
Son's age after 6 years = (X + 6) + 6 = (X + 12) years
Rohan's age after 6 years = (4X + 6) + 6 = (4X + 12) years
=> Therefore 2(X + 12) = 4X + 12, => 2X = 12
=> X = 6
Hence, son's present age = (X + 6) = 12 years, Rohan's present age = (4X + 6) = 30 years

179. My father was 30 years of age when my sister was born. My mother was 38 years of age when I was born. My sister was 6 years of age when my brother was born who is 3 years elder to me. What was the age of my father and mother during the birth of my brother?

A. 41, 36
B. 24, 28
C. 28, 24
D. 36, 35

Answer D

Explanation: My brother was born 6 years after my sister was born and 3 years before I was born. Age of father during my brother's birth = (30 + 6) = 36 years.
Age of mother during my brother's birth = (38 – 3) = 35 years.
Hence, during the birth of my brother, my father was 36 years old and my mother was 35 years old.

180. Eleven bags are bought for Rs. 1000 and sold at 10 for Rs. 1100. What is the gain or loss in percentage?

A. 10%
B. 21%
C. 25%
D. 20%

Answer B

Explanation: As selling price is Rs.1100 for 10 bags, each bag is sold at Rs.110.
Hence, the profit is Rs.100 after selling 10 bags plus the selling price of 1 bag = 100 + 110 = Rs.210. %profit = 210/1000 *100,
=> 21%

181. By purchasing an article at 20 % discount on the original price and then selling it at a price of 25% above the original price, a trader earns Rs. 200 as the profit. What was the original price of the article?

A. Rs. 444.44
B. Rs. 255.50
C. Rs. 100.10
D. Rs. 810

Answer A

Explanation: Let the original price of the article be Rs. 100.
Hence the purchase price for the trader would be Rs. 80
and his selling price would be Rs. 125. => Thus, he would earn a profit of Rs. 45 (125 – 80).
Therefore, Profit is Rs. 45 if the original price is Rs. 100
=> Hence, if profit is Rs. 200, then original price will be.. => 100x 200/45
=> Rs. 444.44

182. Find the resultant profit if A sells a cupboard at a profit of 6% to B and B sells the same to C at a profit of 9%.

A. 15%
B. 16%
C. 14.5%
D. 15.54%

Answer D

Explanation: The resultant profit = 1.06 * 1.09 = 1.1554 = 15.54%
Alternatively, the resultant profit = [x + y + xy/100]
= 6 + 9 + (6*9)/100, => 15 + 0.54,
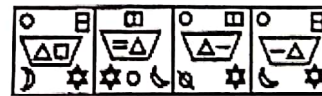=> 15.54%

183. Which word does NOT belong with the others?

A. tape
B. twine
C. cord
D. yarn

Answer A

184. Select the alternative in which the specified components of the key figure (X) are found.

A. 1
B. 2
C. 3
D. 4

185. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The duration of the flight is.

A. 1 hour
B. 2 hours
C. 3 hours
D. 4 hours

Answer A

186. Find odd one out. 3, 5, 7, 12, 17, 19

A. 19
B. 17
C. 5
D. 12

Answer D

187. What will be ratio of simple to compound interest on two same sums invested in SBI at rate of interest of 8% kept for 3 years?

A. 1875/2029
B. 1/2.5
C. 1903/2156
D. 4/9

Answer A

Explanation : Simple Interest = $\dfrac{PRT}{100}$

For compound interest, Total Amount = $P\left(1 + \dfrac{R}{100}\right)^n$

Where, P = Principal, R= Rate of interest, T & n = time period

=> Compound Interest = Amount –Principal = $P\left(1+\dfrac{R}{100}\right)^n - P$

=> $\dfrac{\text{Simple Interest}}{\text{Compound Interest}} = \dfrac{\frac{P\times 8\times 3}{100}}{P\left(\left(1+\frac{8}{100}\right)^3 - 1\right)}$ => $\dfrac{\frac{24}{100}}{\left(\frac{27}{25}\right)^3 - 1}$ => $\dfrac{\frac{24}{100}}{\frac{27^3 - 25^3}{25^3}}$

=> $\dfrac{25^3}{27^3 - 25^3} \times \dfrac{24}{100}$ => $\dfrac{25 \times 25 \times 6}{27^3 - 25^3}$

We know that $(a^3 - b^3) = (a-b)(a^2 + ab + b^2)$

=> $\dfrac{625 \times 6}{(27 - 25)(27^2 + 27 \times 25 + 25^2)}$

=> $\dfrac{625 \times 3}{729 + 675 + 625}$ => $\dfrac{1875}{2029}$

188. Aman got a salary of Rs. 8600. The salary was invested by him in two parts. Find the difference between the two parts of his salary, if in first part he got some simple interest at 15% per annum in 4 years, which was same as the second part which he invested at 20% for 3 years.

Answer A

A. Rs. 0
B. Rs. 2400
C. Rs. 100
D. Rs. 4500

Explanation :
Let, one part of salary be Rs M then other part is Rs. (8600-M)
We know that simple interest is same

=> Simple Interest =SI => $\dfrac{PRT}{100}$ Where, P = Principal, R= Rate of interest, T = time period

=> $\dfrac{M \times 15 \times 4}{100} = \dfrac{(8600-M) \times 20 \times 3}{100}$

=> M = Rs. 4300 = One part of salary, Second part = 8600-4300 = R 4300
Difference between parts = 4300-4300 = R.s.0

189. Arrange the following words as per order in the dictionary.
1. Forest
2. Fascinating
3. Fantastic
4. Fabulous
A. 2, 4, 3, 1
B. 4, 2, 3, 1
C. 4, 3, 2, 1
D. 2, 3, 4, 1

Answer C

190. On simplification of the following, the result will be
$(1 - 1/2)(1 - 1/3)(1 - 1/4)\ldots\ldots(1 - 1/100)$
A. 0.01
B. 0.001
C. 1
D. 0.1

Answer A

Explanation:
This is very easy to solve
Now first we can see that

$1 - \dfrac{1}{2} = \dfrac{1}{2}; 1 - \dfrac{1}{4} = \dfrac{3}{4}; 1 - \dfrac{1}{4} = \dfrac{3}{4}$ and so on.

By this series we can write the given number as

$\dfrac{1}{2} \times \dfrac{2}{3} \times \dfrac{3}{4} \times \ldots \times \dfrac{99}{100} = \dfrac{1 \times 2 \times 3 \times \ldots \times 99}{2 \times 3 \times 4 \times \ldots \times 100}$

On cancelling common terms from numerator and denominator we get, $\dfrac{1}{100} = 0.01$

191. What is value of $\dfrac{.1 \times .1 \times .1 + .02 \times .02 \times .02}{.2 \times .2 \times .2 + .04 \times .04 \times .04}$

A. 0.0125
B. 0.125
C. 0.25
D. 0.5

Answer B

Explanation :
The given fraction can written as

$\dfrac{\frac{1}{10} \times \frac{1}{10} \times \frac{1}{10} \times \frac{2}{100} \times \frac{2}{100} \times \frac{2}{100}}{\frac{2}{10} \times \frac{2}{10} \times \frac{2}{10} \times \frac{4}{100} \times \frac{4}{100} \times \frac{4}{100}}$

$= \dfrac{\frac{1}{1000} + \frac{8}{1000000}}{\frac{8}{1000} + \frac{64}{1000000}} = \dfrac{\frac{1008}{1000000}}{\frac{8064}{1000000}} = \dfrac{1}{8} = 0.125$

192. 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women & 10 children take to complete the work?
A. 6 days
B. 7 days
C. 8 days
D. 9 days

Answer B

193. A person incurs a loss of 5% be selling a watch for Rs. 1140. At what price should the watch be sold to earn 5% profit.
A. Rs.1200
B. Rs.1230
C. Rs.1260
D. Rs.1290

Answer C

194. A person crosses a 600 meter long street in 5 minutes. What is the speed in Km/hr
A. 6.2 km/hr
B. 7.2 km/hr
C. 8.2 km/hr
D. 9.2 km/hr

Answer B

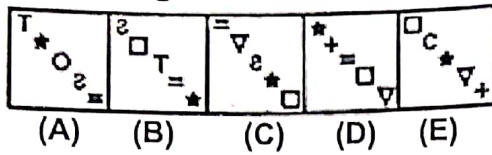**195.** Find the rate at Simple interest, at which a sum becomes four times of itself in 15 years.
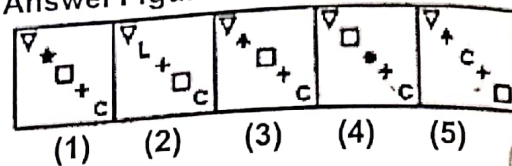A. 10%
B. 20%
C. 30%
D. 40%

Answer B

196. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

Problem Figures:

Answer Figures:

(A)   (B)   (C)   (D)   (E)

(1)   (2)   (3)   (4)   (5)

A. 1
C. 3
B. 2
D. 4
E. 5

Answer C

197. Find the rate at Simple interest, at which a sum becomes four times of itself in 15 years.

A. 10%
B. 20%
C. 30%
D. 40%

Answer B

198. A can finish a work in 18 days and B can do same work in half the time taken by A. then working together, what part of same work they can finish in a day.

A. $\frac{1}{5}$
B. $\frac{1}{6}$
C. $\frac{1}{7}$
D. $\frac{1}{8}$

Answer B

199. A man takes 3 hours 45 minutes to row a boat 15 km downstream of a river and 2 hours 30 minutes to cover a distance of 5 km upstream. Find the speed of the current.

A. 1 km/hr
B. 2 km/hr
C. 3 km/hr
D. 4 km/hr

Answer A

200. How many words can be formed from the letters of the word "SIGNATURE" so that vowels always come together.

A. 17280
B. 4320
C. 720
D. 80

Answer A