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Contents

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2014

1. Ibn Batuta visited India during the reign of

(a) Balban (b) Alauddin Khalji (c) Mohd Bin Tughluq (d) Firoz Tughluq

2. Who among the following is known as the 'Flying Sikh of India'?

(a) Milkha Singh (b) Ajit Pal Singh (c) Joginder Singh (d) Mohinder Singh

3. Border Security Force was established in the year:

(a) 1954 (b) 1966 (c) 1967 (d) 1968

4. Maulvi Ahmadullah of Faizabad led the revolt of 1857 in:

(a) Delhi (b) Central India (c) Bihar (d) Rohilkhand

5. Who among the following had constructed the Red Fort in Delhi?

(a) Akbar (b) Jahangir (c) Shah Jahan (d) Aurangzeb

6. Arvind Kejriwal, the leader of the Aam Aadmi Party (AAP) has served in which of these services?

(a) Indian Administrative Services (IAS) (b) Indian Foreign Services (IFS)

(c) Indian Revenue Services (IRS) (d) Indian Police Services (IPS)

7. Sultan Azlan Shah Cup is associated with:

(a) Football (b) Hockey (c) Basketball (d) Cricket

8. Who was the first woman Speaker of the Lok Sabha?

(a) Najma Heptullah (b) Sarojini Naidu (c) Meira Kumar (d) Sushma Swaraj

9. Telecom company 'Nokia' belongs to which country?

(a) USA (b) Finland (c) Sweden (d) France

10. Buland Darwaza at Fatehpur Sikri was constructed by Akbar to commemorate the:

(a) Birth of Prince Salim (b) Victory of Gujrat

(c) Victory of Malwa (d) Victory of Bengal

11. Real name of Nurjahan, wife of Jahangir was:

(a) Mehrun Nisa (b) Mahinoor (c) Qaisar Jahan (d) Jodha Bai

12. Sir Syed Ahmad Khan wrote Tafsir of

(a) Bible (b) Zuboor (c) Sahif – e – Ibrahim (d) None of these

13. Quran was revealed to Prophet Muhammad (P.B.U.H) at:

(a) Makkah and Madinah (b) Madinah and Kuf

(c) Makkah and Taif (d) Makkah and Habsha

14. Battle of Uhad was fought in:

(a) Madina (b) Makkah (c) Syria (d) Kufa

15. Where is Masjid – i – Nabwi?

(a) Habsha (b) Makkah (c) Madinah (d) Taif

16. Who was famous with the title of 'Ameen' in Mekkah?

(a) Abdullah (b) Abdul Muttalib (c) Muhammad (S.A.W.) (d) Ibraahim

17. The following is known traditionally as hadith:

(a) The word of god

(b) Saying, doing and approval of the Prophet

(c) Saying of the Companion of the Prophet

(d) None of these

18. Compilation of the Quran was done during the period of the companion:

(a) Abu Bakr Siddique (R.A.) (b) Umar Farooque (R.A.)

(c) Salman Farsi (R.(A) (d) Ali Murtaza (R.A.)

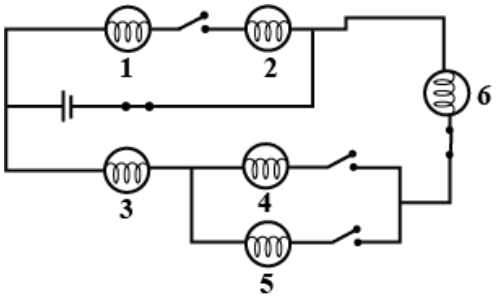
19. The islamic calendar is called:

(a) Hijri (b) Shamsi (c) Abbasid (d) Arabic

20. Agreement of Sulah Hudaibiyah was settled in:

(a) 7 A.H. (b) 6 A.H. (c) 9 A.H. (d) 10 A.H.

21. In the electric circuit shown below:



(a) All the bulbs will glow (b) Only bulbs 4, 5 and 6 will glow

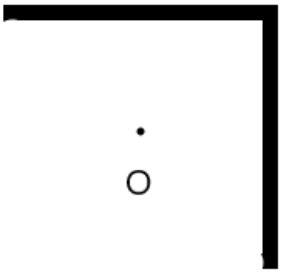
(c) Only bulb 3 will glow (d) None of the bulbs will glow

22. The specific resistance of a rod of copper as compared to that of thin wire of copper is:

(a) more (b) less

(c) same (d) depends upon the length and area of wire

23. Two mirrors are placed at right angles to each other as shown in the figure. The total number of images of an object, O, placed between them, are seen as:



(a) two (b) three (c) four (d) six

24. The echo of a sonar beep is heard 2.50 s later. If the speed of sound in water is 1400 m/s; the iceberg is at the distance:

(a) 3500 m (b) 1900 m (c) 175 m (d) 142 m

25. An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, the power consumed will be:

(a) 100 W (b) 75 W (c) 50 W (d) 25 W

26. A body floats with 1/3 of its volume outside water and ¾ of its volume outside another liquid. The density of another liquid is

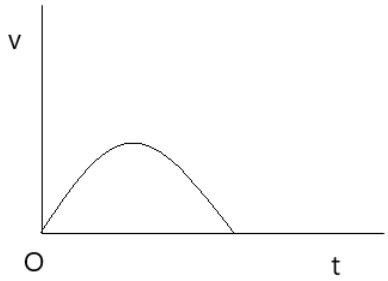
(a) $\frac{9}{4}$ x 10^3 kgm^{-3} (b) $\frac{4}{9}$ x 10^3 kgm^{-3} (c) $\frac{8}{3}$ x 10^3 kgm^{-3} (d) $\frac{3}{9}$ x 10^3 kgm^{-3}

27. If you read a book placed at distance 35.0 cm from your eye and the distance from eye lens to retina is 19.0 mm. The focal length of your eye lens is

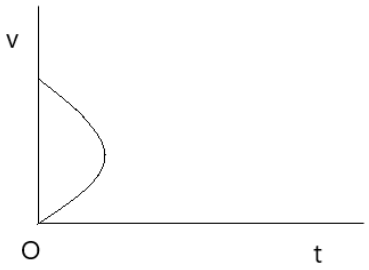
(a) 3.50 cm (b) 5.93 cm (c) 2.00 cm (d) 1.89 cm

28. Which of the following cannot be speed – time graph of a body in motion?

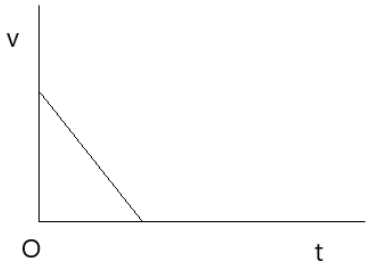
(a)



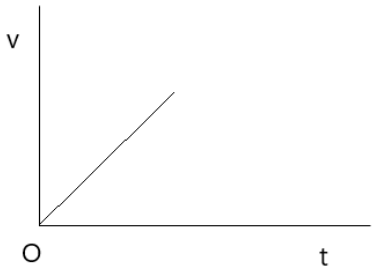
(b)



(c)



(d)



29. What is the momentum of a body of mass 100 g, having a K.E. of 20 J?

(a) 2 kg-m/s (b) ½ kg-m/s (c) 12 g-m/s (d) None of these

30. In order to calculate the gravitational force of attraction, Sir Isaac Newton had made use of

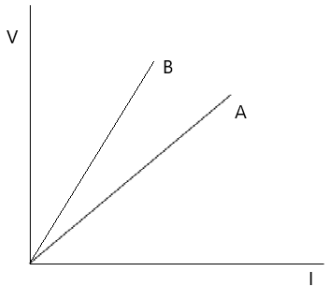
(a) The planet revolve around the sun in elliptical orbit with the sun at one of its foci.

(b) The line joining the planet and the sun sweeps equal areas in equal intervals of time.

(c) The cube of the mean distance of a planet from the sun is proportional to the square of its orbital period.

(d) Gravitational force is equal to the rate of change of momentum.

31. The V-I graphs of parallel and series combinations of two metallic resistors are shown in the figure below. The graph that represents parallel combination is



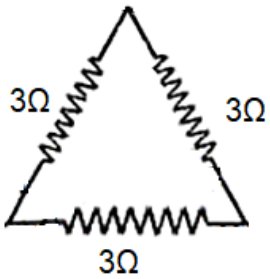
(a) A (b) B (c) Both (a) and (b) (d) None of these

32. Which of the following take(s) place in hydrogen bomb while detonating?

(a) Fission only (b) Fusion only

(c) First fission then fusion only (d) First fusion then fission only

33. Three resistors of resistance 3Ω each are combined to form an equilateral triangle. Resistance between any two ends of the triangle would be



(a) ½ Ω (b) 2 Ω (c) 6 Ω (d) 9 Ω

34. Kinetic energy of a car, when its speed is tripled, is increases by the factor

(a) 3 (b) 4 (c) 9 (d) 27

35. When a potential difference of 3.0 V across a resistor set up a current of 0.6 A in it to flow. The potential difference required to set up the current of 0.4 A in the resistor

(a) 1.0V (b) 2.0V (c) 3.0V (d) 4.0V

36. Gold can be dissolved in

(a) Hydrochloric acid (b) Nitric Acid (c) Steam (d) Aqua Regia

37. Mixing an acid with water results in

(a) Decrease in the concentration of H_3O^+ ions per unit volume.

(b) Increase in the concentration of H_3O^+ ions per unit volume.

(c) The concentration of H_3O^+ ions per unit volume remains same.

(d) Absorption of heat

38. Which gas is produces when sodium reacts with ethanol?

(a) Hydrogen (b) Carbon monoxide (c) Carbon dioxide (d) Water Vapours

39. When a metal 'X' reacts with cold water it produces hydrogen gas and metal hydroxide having formula XOH. Its balanced chemical equation is below:

$2X + 2H_2O \rightarrow 2XOH + H_2$

If molecular mass of XOH is 40. The name of metal 'X' is

(a) Calcium (b) Potassium (c) Magnesium (d) Sodium

40. The electronic configuration of the element $^{40}_{20}X$ is

(a) 2, 8, 10 (b) 2, 8, 8, 2 (c) 2, 10, 8 (d) 2, 8, 18, 8, 4

41. A solution reacts with crushed egg shells to give a gas that turns lime water milky. The solution contains

(a) NaCl (b) KCl (c) HCl (d) $CaCl_2$

42. Aqua Regia is freshly prepared mixture of

(a) 3:1 concentrated sulphuric acid and concentrated nitric acid

(b) 3:1 concentrated hydrochloric acid and concentrated sulphuric acid

(c) 3:1 concentrated hydrochloric acid and concentrated nitric acid

(d) 3:1 concentrated nitric acid and water

43. Which of the following pairs will give displacement reactions?

(a) NaCl solution and copper metal (b) $MgCl_2$ solution and aluminium metal

(c) $FeSO_4$ solution and silver metal (d) $AgNO_3$ solution and copper metal

44. Formula unit mass of $CaCl_2$ is

(a) 70u (b) 82u (c) 111u (d) 63u

45. 1 mole of nitrogen gas is equal to

(a) 14g (b) 7g (c) 28g (d) 42g

46. The valency of Fe in Fe_2O_3 is

(a) 2 (b) 3 (d) 4 (d) 5

47. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$

The above reaction is

(a) Combustion reaction (b) Combination reaction

(c) Displacement reaction (d) Double – displacement reaction

48. Phenolphthalein gives pink colour in

(a) Acidic medium (b) Basic medium

(c) Neutral medium (d) Both acidic and basic

49. HCl dissolves in water and give _____ and Cl^- ion

(a) H^+ (b) OH^- (c) $H3O^+$ (d) None of these

50. Plaster of Paris on mixing with water changes to

(a) $CaSO_4.2H_2O$ (b) $CaSO_4$. ½ H_2O

(c) $(CaSO_4)_2.½H_2O$ (d) $CaSO.H_2O$

51. The value of tan 48° tan 23° tan 42° tan 57° is:

(a) 0 (b) 1 (c) 2 (d) None of these

52. The two roots of the equations: $a(b-c)x^2 + b(c-a)x + c(a-b) = 0$ are 1 and

(a) $\frac{c(a-b)}{b(c-a)}$ (b) $\frac{b(c-a)}{a(b-c))}$ (c) $\frac{a(b-c)}{b(c-a)}$ (d) $\frac{c(a-b)}{a(b-c))}$

53. If the points (2, 3), (4, k) and (6, -3) are collinear, then the value of k is

(a) 0 (b) 2 (c) -2 (d) 4

54. ABCD is a rhombus and P, Q, R and S are the midpoints of the sides AB, BC, CD and DA. The quadrilateral PQRS is a

(a) Rectangle (b) Parallelogram (c) Triangle (d) Rhombus

55. If the points A(5, 2), B(4, 7) and C(7, -4) forms a triangle ABC, then the area of a triangle is equal to

(a) -4 (b) 4 (c) 2 (d) 5

56. If the roots of a quadratic equation $(a^2 + b^2)x^2 – 2b(a + c)x + (b^2 + c^2) = 0$ are equal, then

(a) 2b = a+c (b) $b^2 = ac$ (c) $b = \frac{2ac}{a+c}$ (d) b = ac

57. If $\bar{x}$ is the mean of $x_1, x_2, x_3, \ldots\ldots, x_n$ then mean of $(x_1+k), (x_2+k), (x_3+k), \ldots., (x_n+k)$ will be

(a) $\bar{x}$ (b) $k\frac{1}{x}$ (c) k (d) $\bar{x} + k$

58. Two dice are thrown simultaneously. What is the probability of getting a doubles?

(a) $\frac{1}{6}$ (b) $\frac{1}{12}$ (c) $\frac{5}{18}$ (d) $\frac{11}{36}$

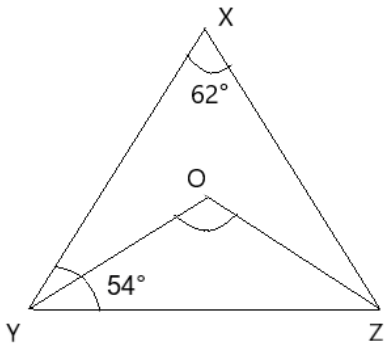
59. In ΔABC, D is the midpoint of BC, B is the midpoint of DC and O is the midpoint of AB. The ratio of areas of ΔAOC and ΔABC is

(a) 1:6 (b) 1:7 (c) 1:8 (d) 1:9

60. The length of a tangent from a point A at distance 5 cm from the centre of the centre is 4 cm. The radius of the circle is equal to

(a) 5 cm (b) 3 cm (c) 4 cm (d) 8 cm

61. In the adjoining figure, if YO and ZO are the bisectors of ∠Y and ∠Z then, ∠YOZ equals to



(a) 121° (b) 36° (c) 40° (d) 25°

62. 5 pencils and 7 pens together cost Rs.50 whereas 7 pencils and 5 pens together cost Rs.46, then the cost of one pencil is equal to

(a) Rs.5 (b) Rs.7 (c) Rs.3 (d) Rs.9

63. The area of a sector of a circle with radius 6 cm, if angle of the sector is 60° is equal to

(a) 132/7 cm^2 (b) 135/7 cm^2 (c) 130 cm^2 (d) 135 cm^2

64. The diagonals of parallelogram are

(a) bisect each other (b) equal

(c) perpendicular to each other (d) None of these

65. Sum of the n term of the series $\sqrt{2}$, $\sqrt{8}$, $\sqrt{18}$, $\sqrt{32}$, ……. is

(a) n(n+1)/ $\sqrt{2}$ (b) $\sqrt{2}$(n)(n+1) (c) n(n+1)/ $\sqrt{2}$ (d) None of these

66. If α and β are the zeroes of the quadratic polynomial x^2-2x-8, then α + β + αβ is

(a) 6 (b) -6 (c) -10 (d) 10

67. The quadratic polynomial formed by the reciprocal of zeroes of the quadratic polynomial x^2 - 3x + 2 is

(a) $-3x^2+x+2$ (b) $2x^2-3x+1$ (c) x^2+2x-3 (d) $2x^2+3x-1$

68. If ΔABC ~ΔDEF and their areas be respectively 64cm^2 and 121 cm^2. If EF= 15.4 cm then the value of BC is

(a) 15 cm (b) 12 cm (c) 11.2 cm (d) 18 cm

69. Two poles of heights 6 m and 11 m stand on a plane ground. If the distance between the feet of the poles is 12 m. The distance between their tops equal to

(a) 13 m (b) 14 m (c) 15 m (d) 20 m

70. If the zeroes of the polynomial x^3 - $3x^2$ + x + 1 are a-b, a, a+6, find a and b.

(a) a=2, b=±$\sqrt{3}$ (b) a=1, b=±$\sqrt{2}$ (c) a=3, b=0 (d) a=$\sqrt{2}$, b=$\sqrt{3}$

71. In ΔABC, E is the midpoint of median AD the, ar(ΔBED) =

(a) 1/3 ar(ΔABC) (b) 1/4 ar(ΔABC) (c) 1/8 ar(ΔABC) (d) 1/6 ar(ΔABC)

72. ABCD is a parallelogram, X and Y are the midpoints of BC and CD respectively, then the area of ΔAXY is equal to

(a) 1/2 ar(ABCD) (b) 1/4 ar(ABC(D) (c) 3/4 ar(ABC(D) (d) 3/8 ar(ABC(D)

73. If y + 1/4 = 2, then the value of $16y^3 + \frac{1}{4y^3}$ is

(a) 102 (b) 104 (c) 105 (d) 106

74. A river 3 m deep and 40 m wide is flowing at the rate of 2 km per hour into the sea. How much water will fall into the sea in a minute?

(a) 400 m^3 (b) 2400 m^3 (c) 4000 m^3 (d) 4200 m^3

75. If α+β = 90° and α=2β, then cos2α + sin2β is equal to

(a) 1 (b) 0 (c) ½ (d) 2

76. ABC is a right triangle, right angled at C. Let BC= a, CA= b and AB= c and let p be the length of perpendicular from C on AB, then $1/p^2$ is equal to

(a) $\frac{1}{a^2} + \frac{1}{b^2}$ (b) $\frac{1}{a^2} - \frac{1}{b^2}$ (c) $\frac{1}{a^2} + b^2$ (d) $\frac{1}{a^2 b^2}$

77. The value of $(x^b/x^c)^{1/bc}$ $(x^c/x^a)^{1/ca}$ $(x^a/x^b)^{1/ab}$ on simplifying is

(a) x (b) 1/x (c) 1 (d) -1

78. If points (a, -11), (5, (b), (2, 15) and (1, 1) are the vertices of a parallelogram taken in order, then the values of a and b are

(a) a=4, b= -3 (b) a= -4, b=3 (c) a= -4, b= -3 (d) a=4, b=3

79. If the volume of a right circular cone is 9856 cm^3 and diameter of base is 28 cm then slant height of cone is

(a) 49 cm (b) 50 cm (c) 60 cm (d) 20 cm

80. $(x+y)^3 – (x-y)^3 – 6y(x^2-y^2)$ is equal to

(a) x+y (b) x-y (c) $8x^3$ (d) $8y^3$

81. Singe circular chromosome is found in

(a) Human cell (b) Amoeba (c) Plant cell (d) Bacteria

82. A solution used to stain cell is

(a) Iodine (b) Safranin (c) Methylene blue (d) All of these

83. A Pteridophytic plant is

(a) Bird-wing (b) Flying-fox (c) Horse-tail (d) None of these

84. This is an algae

(a) Marsilea (b) Riccia (c) Spirogyra (d) Marchantia

85. A ‘Rabi’ crop

(a) Rice (b) Maize (c) Wheat (d) Cotton

86. If a cell is kept in a hypertonic solution, it will

(a) Swell up (b) Shrink (c) Swim in a side (d) Stay the same size

87. In plants, autotrophic mode of nutrition requires

(a) Sunlight (b) Chlorophyll (c) CO_2 and H_2O (d) All of these

88. Phototropism in plants is controlled by

(a) Cytokinins (b) Gibberellins (c) Auxins (d) Abscisic acid

89. An example of micronutrient of the crop plant

(a) Manganese (b) Sulphur (c) Potassium (d) Oxygen

90. Xylem and phloem tissues are found in

(a) Fern (b) Moss (c) Riccia (d) Marchantia

91. The site of complete digestion of food:

(a) Stomach (b) Duodenum (c) Small intestine (d) Large intestine

92. Which of the following organisms reproduce by multiple fission?

(a) Leishmania (b) Amoeba (c) Malaria parasite (d) Both (a) and (b)

93. Brown – Swiss is an exotic breed of

(a) Cow (b) Hen (c) Buffalo (d) Wheat

94. Bombay duck and tuna are examples of

(a) Fresh water fishes (b) Marine fishes (c) Honey – bees (d) Poultry birds

95. Japanese encephalitis or brain fever is caused by

(a) Bacteria (b) Virus (c) Protozoan (d) Fungus

96. Which of these is not a true fish?

(a) Jelly fish (b) Flying fish (c) Sea horse (d) Lion fish

97. Fungal cell wall is made up of

(a) Lignin (b) Suberin (c) Chitin (d) Cellulose and pectin

98. The five kingdom classification was given by

(a) Carl Woese (b) Carolus Linnaeus

(c) Ernst Heachel (d) Robert Whittaker

99. Eosinophil and basophil cells are found in

(a) Cartilage (b) Areolar tissue (c) Adipose tissue (d) Blood

100. Solid matrix of cartilage is made up of

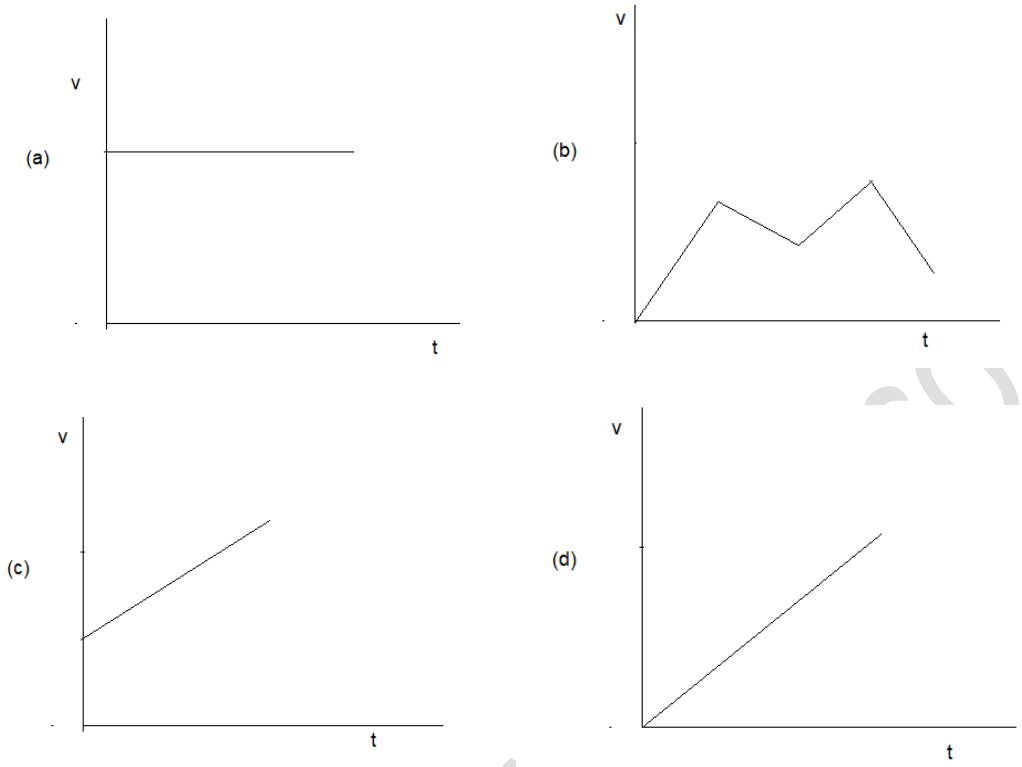
(a) Proteins and sugar (b) Calcium and phosphorus

(c) Proteins and calcium carbonate (d) Proteins and phosphorus

Answer Key 2014

1.c	2.a	3.a	4.d	5.c	6.c	7.b	8.c	9.b	10.b	11.a	12.a
13.a	14.a	15.c	16.c	17.b	18.a	19.a	20.b	21.d	22.c	23.b	24.c
25.d	26.c	27.d	28.b	29.a	30.c	31.a	32.c	33.b	34.c	35.b	36.d
37.b	38.a	39.d	40.b	41.c	42.c	43.d	44.c	45.c	46.b	47.d	48.b
49.c	50.a	51.b	52.d	53.a	54.a	55.c	56.b	57.d	58.a	59.c	60.b
61.a	62.c	63.a	64.a	65.c	66.b	67.b	68.c	69.a	70.b	71.b	72.d
73.b	74.c	75.c	76.a	77.c	78.d	79.b	80.d	81.d	82.d	83.c	84.c
85.c	86.b	87.d	88.c	89.a	90.a	91.c	92.c	93.a	94.b	95.b	96.a
97.c	98.d	99.d	100.a								

1. The nature of velocity-time graph for non-uniform motion of an object is:



2. A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of 10 m/sec^2, after what time will it strike the ground?

(a) 1.414s (b) 2s (c) 4s (d) 1s

3. Which of the following has more if their size is same:

(a) A rubber ball. (b) A stone ball (c) a plastic ball (d) an iron ball

4. An object weights 12 N when measured on the surface of the earth, what would be its weight when measured on the surface of the moon?

(a) 12 N (b) 1 N (c) 3 N (d) 2 N

5. A block of wood is kept on a table top. The mass of wooden block is 10 kg and its dimensions are 50cm x 20cm x 10cm. What would be the pressure exerted by the wooden block on the table top, if it is made to lie on the table top with its sides of dimension 20cm x 10cm:

(a) 2450 N/m^2 (b) 4900 N/m^2 (c) 980 N/m^2 (d) 9800 N/m^2

6. An object of weight 120 N is at a certain height above the ground. If the potential energy of the object is 480J , the height at which the object is with respect to the ground will be:

(a) 0.25 m (b) 4 m (c) 0.4 mm (d) 25m

7. Two girls A and B each of weight 400 N climb up a rope through a height of 10 m. Girl A takes 25s while girl B takes 50s to accomplish this task. The comparison of power spent by two girls is:

(a) Both equal (b) Girl A has more power

(c) Girl B has more power (d) none of the above.

8. A person clapped his hands near a minaret and heard the echo after 4s. What is the distance of the minaret from the person if the speech of the sound is taken as 344 m/s?

(a) 1376 m (b) 688 m (c) 2752 m (d) 344m

9. If the object is placed between centre of curvature C and focus F , the position of the image by a concave mirror is

(a) At the focus F (b) at C (c) beyond C (d) behind mirror

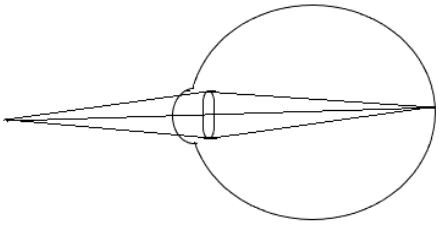
10. A spherical mirror and a thin spherical lens have each a focal length of -15 cm. The mirror and lens are likely to be:

(a) Both concave (b) both convex

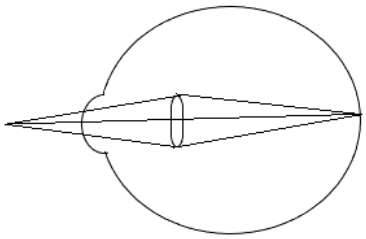
(c) mirror concave, lens is convex (d) mirror convex, lens concave

11. Which diagrams shows the defect of hypermetropia:

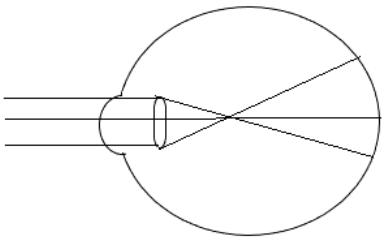
(a)



(b)



(c)



(d) None of the above

12. The change in focal length of an eye lens is caused by the action of the :

(a) Pupil (b) Retina (c) ciliary muscles (d) Iris

13. A current of 0.5 A is drawn by a filament of an electric bulb for 20 min. Find the amount of electric charge that flows through the circuit?

(a) 300 C (b) 600 C (c) 20 C (d) 200 C

14. 100 J of heat is produced each second in a 4Ω resistance. find the potential difference across the resistor:

(a) 10 V (b) 200V (c) 30V (d) 20 V

15. At the time of short circuit, the current in the circuit :

(a) Reduce substantially (b) does not change

(c) increase heavily (d) vary continuously

16. Which is not the part of electric motor:

(a) Insulated copper wire (b) coil

(c) split rings (d) stationary brushes(different position)

17. Biogas contains about:

(a) 29% Methane (b) 80% Methane (c) 92% Methane (d) 75% Methane

18. The cause of reddening of the sun and twinkling of the stars respectively is:

(a) Scattering of light and atmosphere

(b) Atmospheric refraction and scattering of light

(c) Dispersion and Tyndall effect

(d) Tyndall effect and dispersion

19. Dry ice is also known as :

(a) H_2O in solid state (b) $CaCO_3$ (c) CO_2 (d) D_2O

20. Brass is a mixture of :

(a) 20% Zinc, 80% iron (b) 30% zinc, 70% copper

(c) 30% zinc , 70% copper (d) 30% iron, 70% copper.

21. A solution contains 20g common salt in 520 g of water. The concentration in terms of mass by mass percentage of the solution is :

(a) 4.02% (b) 11.1% (c) 3.84% (d) 3.70%

22. According to the law of constant proportion in ammonia, nitrogen and hydrogen are present in the ratio (by mass)

(a) 1:8 (b) 3:14 (c) 8:1 (d) 14:3.

23. Which among the following is a tetra- element:

(a) Oxygen (b) Helium (c) phosphorous (d) neon.

24. Isotopes have:

(a) Same mass number and different atomic number.

(b) Same atomic number and different atomic mass.

(c) Same number of protons and neutrons

(d) Same number of electrons.

25. What is correct electronic configuration of aluminium?

(a) 2,8,1 (b) 2,8 (c) 2,8,2 (d) 2,8,3

26. $2Pb(NO_3)_2(s) \xrightarrow{heat} 2PbO(s) + 4NO_2(g) + O_2(g)$ is an example of :

(a) Displacement reaction (b) decomposition reaction

(c) Double displacement reaction (d) oxidation and reduction

27. Which of the following is an example of redox reaction:

(a) $2Cu + O_2 \rightarrow 2CuO$ (b) $2AgBr \xrightarrow{\Delta} 2Ag + Br$

(c) $ZnO + C \rightarrow Zn + CO$ (d) $2H_2 + O_2 \rightarrow 2H_2O$.

28. Tooth decay starts when the pH of the mouth is :

(a) =5.5 (b) >5.5 (c) <5.5 (d) =6.0

29. Washing soda is obtained by the recrystallisation of :

(a) Sodium hydrogen carbonate. (b) bleaching powder

(c) sodium hydroxide (d) sodium carbonate

30. What is the correct order of reactivity of metals in increasing order?

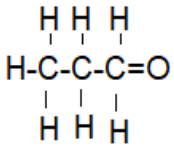
(a) A> Me > Ca>Cu (b) Na>Ca>Mg>Zn

(c) Cu>Ca>Al>Me (d) Au>Ag>Hg>Cu

31. The alloy of Mercury is called:

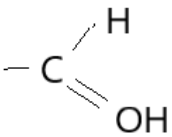
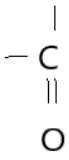
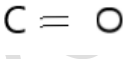
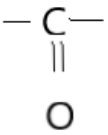
(a) Brass (b) Bronze (c) Amalgam (d) Steel

32. Give name of the structure:



(a) Propanone (b) Prapanol (c) Propanal (d) Propene

33. What is the structure of functional group carboxylic acid:

(a)  (b)  (c)  (d) 

34. The atomic size :

(a) increases down the group (b) Decreases down the group

(c) Increases along the period (d) first increases then decreases in period.

35. cells were first discovered by:

(a) Robert hooke (b) Scheilden (c) Schwann (d) Virchow.

36. Which out of the following is not an example of pteridophyta:

(a) Marsilea (b) Ferns (c) Horse tails (d) Funaria

37. Which of the following is not a vertebrate?

(a) Dog fish (b) Rana tigrina (c) Turtle (d) Starfish

38. Who amongst the following received Nobel prize for the physiology and medicine in 2005

(a) Marshall and Warren (b) William and Anderson

(c) Amartya Sen (d) Abdus Salam

39. The process in which water evaporates and falls on the land as rain and latter flows back into the sea via rivers is called:

(a) Carbon cycle (b) Nitrogen cycle (c) water cycle (d) none of the above

40. The xylem in plants are responsible for :

(a) Transport for water (b) Transport for food

(c) Transport for amino acids (d) Transport of oxygen

41. The breakdown of pyruvate to give carbon dioxide, water and energy takes in :

(a) Cytoplasm (b) mitochondria (c) chloroplast (d) nucleus

42. Which of the following is not a part of the female reproductive system in human beings?

(a) Ovary (b) Uterus (c) Vas deferens (d) Fallopian Tube.

43. The anther contains:

(a) Sepals (b) Ovules (c) Carpel (d) Pollen grains

44. An example of homologous organ is:

(a) Our arm and a dog's fore-leg

(b) Our teeth and an elephant 's tusks

(c) Potato and runners of grass

(d) All of the above

45. Which of the following groups does not contain only biodegradable items?

(a) Grass, flowers and leather (b) Grass, wood and plastic

(c) Fruit peels, cake and lime juice (d) Cake, wood and grass.

46. Which of the following constitute a food chain?

(a) Grass, wheat and mango. (b) Grass, goat and human

(c) Goat, cow and elephant (d) Grass, fish and goat.

47. Which of the following are environment friendly practices?

(a) carrying cloth bags to put purchases while shopping.

(b) Switching off unnecessary lights and fans.

(c) Walking to school instead of getting your mother to drop you on her scooter.

(d) All of the above.

48. The kidneys in Human beings are a part of the system for:

(a) Nutrition (b) Respiration (c) Excretion (d) Transportation.

49. The autotrophic mode of nutrition requires :

(a) Carbon dioxide and water (b) chlorophyll

(c) Sunlight (d) All of the above

50. A sexual reproduction takes place through budding in:

(a) Amoeba (b) Yeast (c) Plasmodium (d) Leishmania

51. Which of the following statement is false?

(a) Every integer is a rational number.

(b) Every whole number is a natural number

(c) There are infinitely many rational numbers between any two given rational numbers.

(d) Every real number is represented by a unique point on the number line.

52. Factors of $x^3 - 23x^2 + 142x - 120$ are:

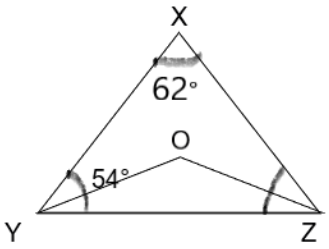
(a) (x+1) (x-10) (x-12) (b) (x+1) (x+10) (x-12)

(c) (x-1) (x-10) (x-12) (d) (x+1) (x-10) (x+12)

53. It is given that $\angle XYZ = 64^\circ$ and XY is produced to point P. If ray YQ bisects $\angle ZYP$, the reflex $\angle QYP$ is:

(a) 322° (b) 290° (c) 120° (d) 302°

54. In the figure $\angle X = 62^\circ$ and $\angle XYZ = 54^\circ$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of ΔXYZ, $\angle YOZ$ will be:



(a) 110° (b) 121° (c) 142° (d) 108°

55.Which of the following is not correct?

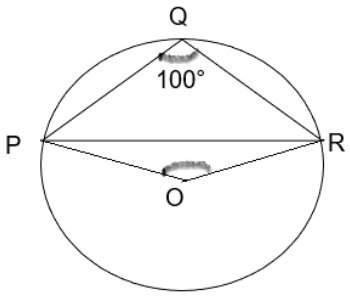
(a) Two circles of the same radii are congruent.

(b) Two squares of same side are congruent

(c) In a triangle; angle opposite to larger side is smaller

(d) Sum of any two sides of a triangle is greater than the third side.

56. In figure ∠PQR =100˚ where P, Q, R are points on a circle with centre O. The ∠OPR is :



(a) 30˚ (b) 45˚ (c) 10˚ (d) 60˚

57. ABCD is a cyclic quadrilateral whose diagonals intersect at a point E. If ∠DBC=70˚ , ∠BAC=30˚. Find ∠BCD

(a) 80˚ (b) 90˚ (c) 70˚ (d) 60˚

58. The sides of a triangular plot are in ratio 3:5:7 and its perimeter is 300m. It's area in sq.m. is:

(a) 3000 (b) 1580 (c) $1500\sqrt{3}$ (d) $1600\sqrt{2}$

59. A field is in shape of a trapezium whose parallel side are 25 m and 10 m. The non parallel sides are 14 m and 13 m. The area of a field in sq.m is:

(a) 120 (b)142 (c) 180 (d) 196.

60.The diameter of a roller is 84 cm and its length is 120 cm. It takes 500 complete revolutions to move once over to a playground. The area of playground in sq.m is:

(a) 1482 (b) 1584 (c) 1678 (d) 1614

61. the curved surface area of a cone is 308 cm ^{2} and its slant high is 14 cm. The total surface area of cone in sq.cm. is

(a) 312 (b) 412 (c) 362 (d) 462.

62. Twenty seven solid iron spheres each of radius r and s are melted to form a sphere with surface area S. The ratio of S and S is:

(a) 1:9 (b) 1:6 (c) 1:4 (d) 1:3

63. In a mathematics test given to 15 students, the following (marks out of 100) are recorded 41, 39, 48, 52, 46, 62, 54, 40, 96, 52,9,8,40,42,52,60. The median of the data is:

(a) 46 (b) 52 (c) 54 (d) 60

64. Eleven bags of wheat flour; each marked 5 kg actually contained the following weights of flour (in kg)

4.97, 5.05, 5.08, 5.03, 5.00, 5.06, 5.08, 4.98, 5.04, 5.07, 5.00

Find the probability that any of these bags chosen at random contains more than 5 kg of flour.

(a) 9/11 (b) 8/11 (c) 7/11 (d) 6/11

65. The LCM of 6, 72 and 120 is 360, their HCF is :

(a) 120 (b) 6 (c) 72 (d) none of these.

66. On dividing x^3-3x^2+x+2 by a polynomial g(x), the quotient and remainder are x-2 and -2x +4 respectively. The g(x) is :

(a) x^2+x+1 (b) x^2-x+1 (c) x^2+x+1 (d) x^2-x-1

67. Five years hence, the age of William will be three times of his son. Five years ago, William's age was seven times that of his son. The present age of William in years is:

(a) 50 (b) 45 (c) 40 (d) 35

68. The sum and product of two numbers is 27 and 182 respectively. One of these is:

(a) 8 (b) 10 (c) 12 (d) 14

69. Sum of the areas of two squares is 468 m^2. The difference of their perimeters is 24m. The side of the large square in m is:

(a) 18 (b) 16 (c) 14 (d) 12

70. The sum of first 51 terms of an AP whose second and third terms are 14 and 18 respectively is:

(a) 5212 (b) 5458 (c) 5610 (d) 5647

71. Three points A (2, 3), B (4,k) and C (6,-3) are collinear .The value of l is:

(a) 3 (b) 2 (c) 1 (d) 0

72. In a triangle ABC, right angled at B, If tan A=$\frac{1}{\sqrt{3}}$, the value of cosA cosC-sinA sinC will be:

(a) -1 (b) 0 (c) +1 (d) -1/2

73. The shadow of a tower standing on a level ground is found to be 40m longer when Sun's altitude is 30˚ than when it is 60˚, the height of tower in m is:

(a) $20\sqrt{3}$ (b) 20 (c) $\frac{20}{\sqrt{3}}$ (d) 10

74. PQ is a chord of length 8cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T, the length TP in cm is:

(a) 8/3 (b) 20/3 (c) 17/3 (d) 11/3

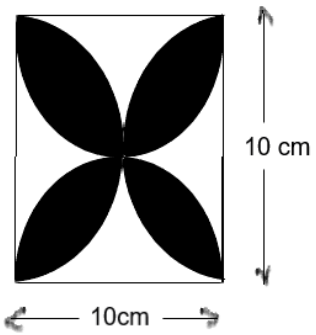
75. From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of the same height and same diameter is hollowed out. The total surface area of the remaining solid in cm^2 is:

(a) 17.6 (b) 20 (c) 10 (d) 8.6

76. The length of the minute hand of a clock is 14 cm. The area swept by the minute hand is 5 minutes, in cm^2,is:

(a) 154/3 (b) 190/3 (c) 120 (d) 69

77. The area of the shaded region in cm^2 where ABCD is a square of side 10 cm with semicircles drawn on each side the square as diameter, is:



(a) 300/7 (b) 400/7 (c) 50 (d) 250/7

78. Two cubes each of volume 64 cm^3 are joined to end. The surface area of resulting cuboid in cm^2 is:

(a) 140 (b) 150 (c) 160 (d)170

79. A cone of height 24cm and radius of base 6 cm is made up of modelling clay. Itis reshaped form of a sphere. The radius of sphere in cm is:

(a) 6 (b) 8 (c) 7 (d) 5

80. A 20 m deep well with diameter 7 m is dug and earth from digging is evenly spread out to form a platform 22m x 14m, the height of platform in m is:

(a) 4 (b) 3.5 (c) 3 (d) 2.5

81. The man Booker prize this year has been won by:

(a) Richard Flanagan (b) Jerome Peter (c) A.C Greyling (d) P. Guidhall

82. Ashraf Ghani is the :

(a) Prime minister of Tunisia. (b) President of Afghanistan.

(c) Secretary General of W.H.O (d) Famous poet of Pakistan.

83. If President of India has to resign, he has to address his resignation letter to the:

(a) Prime minister (b) Speaker (c) Vice-President (d) Chief justice

84. Who among the following is known as the 'Blade Runner'?

(a) Oscar Pistorius (b) Milkha Singh (c) Usain Bolt (d) Kobe Bryant

85. 38th parallel is the boundary line between:

(a) USA and Canada (b) Turkey and Cyprus

(c) Pakistan and Afghanistan (d) North and South Korea

86. MI-5 is the secret agency of :

(a) U.S.A (b) Israel (c) U.K (d) Fance.

87. Who is the Chief Economic Adviser of the Prime Minster?

(a) Arvind Subhramaniam (b) Rajiv Mehrishi (c) D.S Rawat (d) Rajan Pillai

88. Which of the following is the World's highest dam?

(a) Nurek (b) Guri (c) Rogun (d) Tehri

89. How many countries participated in the modern Olympics in 1896?

(a) 10 (b) 12 (c) 13 (d) 15

90. Which of these is not a desert?

(a) steppe (b) Kolahari (c) Sahara (d) Patagonia.

91. Annual fair held during Pre-Islamic period was called :

(a) Suq (b) Ukaz (c) Haj (d) Bait

92. Abraha who led an expedition to ka'abah was ruler of:

(a) Makkah (b) Habsha (c) Taif (d) Yathrib

93. Who was the foster mother of Prophet Muhammad (PBUH):

(a) Aaminah (b) Halima Saadiyah (c) Thuraybah (d) Umm-e-Kulsoom

94. Who become the guardian of Prophet Muhammad (PUBH) after the death of his grandfather ?

(a) Abu Lahab (b) Abu Jahal (c) Abdul Muttalib (d) Abu Talib

95. Who is referred as-Ruhul-Ameen?

(a) Jibrael (b) Mika'il (c) Israfil (d) Iblis

96. The holy Quran is the book of ?

(a) Allah (b) Prophet Muhammad (PUBH)

(c) Hazrat Abu Bakr (d) Hazrat Ali

97. Prophet Hood is sealed after Prophet.....

(a) Hazrat Ibrahim (b) Hazrat Ismail

(c) Hazrat Ishaq (d) Prophet Muhammad (PUBH)

98. Al-Qutubul Sitta (Six) are the collection of?

(a) Fiqah (b) Tasawwuf (c) Quran (d) Hadith.

99. The term " Tasawwuf" means :

(a) Sufi Movement

(b) Islamic Law

(c) Sayings doings and deeds of Prophet Muhammad (PUBH)

(d) Various aspects of Islam.

100. Who is known as toot-i-Hind?

(a) Hazrat Nizamuddin (b) Amir khusrow

(c) Baba Farid Ganj-e-Shakar (d) Nasiruddin Chirag Dehlawi

Answer Key 2015

1. b	2.b	3.d	4.d	5.b	6.b	7.b	8.b	9.c	10.a	11.b	12.c
13.b	14.d	15.c	16.d	17.d	18.a	19.c	20.c	21.d	22.d	23.c	24.b
25.d	26.b	27.c	28.c	29.d	30.b	31.c	32.c	33.d	34.a	35.a	36.d
37.d	38.a	39.c	40.a	41.b	42.c	43.d	44.d	45.b	46.b	47.d	48.c
49.d	50.b	51.b	52.c	53.d	54.b	55.c	56.c	57.a	58.c	59.d	60.b
61.d	62.a	63.b	64.c	65.b	66.b	67.c	68.d	69.a	70.c	71.d	72.b
73.a	74.c	75.a	76.a	77.b	78.c	79.a	80.d	81.a	82.b	83.d	84.b
85.d	86.c	87.a	88.a	89.c	90.a	91.b	92.b	93.b	94.d	95.a	96.a
97.d	98.d	99.a	100.b								

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2016

1. How will you name the following compound? CH_3-CH=CH_2

(a) Propyne (b) Ethyne (c) Propene (d) Butene

2. Functional group in Butanone is:

(a) -CHO (b) -COOH (c) >C=O (d) -OH

3. The metals stored in oil:

(a) Zn, Li, Na (b) Li, K, Na (c) Li, K, P_4 (d) S_8, P_4, K

4. Electrolysis of Brine gives at anode

(a) H_2 gas (b) Cl_2 gas (c) O_2 gas (d) H_2O

5. Removal of oil and dirt from cloth by soap and detergent is due to:

(a) Hydrophobic group (b) Hydrophilic group

(c) Hydrophobic and Hydrophilic group (d) Ionic group

6. Which of these allotropes of carbon is formed of hexagonal arrays being placed in layers?

(a) Diamond (b) C-60 fullerene (c) Graphic (d) Both (a) and (b)

7. The compound showing highest boiling point:

(a) CH_3COOH (b) CH_3-CH_2-CH_3 (c) CH_3OH (d) $CHCl_3$

8. The correct order of biological hierarchy from “Kingdom of species” is:

(a) Kingdom, Order, Family, Class, Phylum, Genus, Species

(b) Kingdom, Phylum Order, Class, Family, Genus, Species

(c) Kingdom, Class Order, Phylum , Family, Genus, Species

(d) Kingdom, Phylum, Class, Order, Family, , Genus, Species

9. Members of Phylum Arthropoda lack one of the following features:

(a) Jointed legs (b) Closed type of circulatory system

(c) Blood filled coelomic cavity (d) Exoskeleton

10. Roundworms infect human by:

(a) Penetration of skin by infective larvae

(b) Infective larvae reaching gastro-intestinal tract through improperly cooked pork

(c) Eggs present in contaminated food and water

(d) Autoinfection

11. Staphylococci is a gram-positive bacteria which stains:

(a) Purple (b) Red (c) Brown (d) Pink

12.The correct different between prokaryotic and eukaryotic cells is:

(a) In prokaryotes vacuoles are absent while they are present in eukaryotes

(b) Micro-tubulus are present in prokaryotes while absent in eukaryotes

(c) Prokaryotes have smaller nucleus while eukaryotes have bigger nucleus

(d) Lysosome are absent in eukaryotes while they are present in prokaryotes

13. Which is the correct order of increase geological time scale for vertebrate evolution?

(a) Cenozoic, Mesozoic, Palezoic, Precambrian

(b) Cenozoic, Palezoic, Mesozoic, Precambrian

(c) Precambrian, Cenozoic, Palezoic, Mesozoic

(d) Precambrian, Palezoic, Mesozoic, Cenozoic

14. The genotype for the blood group AB is:

(a) I^AI^0 (b) I^AI^B (c) I^BI^0 (d) I^0I^0

15. Which of the following alternative is correct

(a) Jersey & Browa Swiss are breeds of cattle.

(b) Aseel and Leghorn are breeds of poultry.

(c) Pomfret and Bombey duck are domestic fowl.

(d) Rohu and Catla are fresh water fishers.

16. Choose the correct statement:

(a) Primary consumers are key link between and rest of consumers.

(b) Producers convert chemical energy into light energy.

(c) Available energy gradually decrease from higher to lower trophic levels.

(d) Food webs are rate in natural ecosystems.

17. Select the most appropriate statement:

(a) In flowering plants pollen grains and ovules are spatially separated.

(b) In flowering plants pollen grains and ovules are temporally separated.

(c) In flowering plants pollen grains are not indispensable for sexual reproduction.

(d) In flowering plants pollen tube facilitates the delivery of female germ cells to pollen grains.

18.To form Polygonum type of embryo sac megaspore nucleus undergoes:

(a) 3-Meiotic divisions (b) 3-Mitotic divisions

(c) 2-Meiotic divisions (d) 2-Mitotic divisions

19. In a dihylicid cross of yellow and round seed and green and wrinkled seeds, F_2 seeds showed the four possible combinations in the ratio of:

(a) 1:1:1:1 (b) 9:3:3:1 (c) 1:2:2:1 (d) 9:6:1:1

20. The correct sequence in the pathway of 'Reflex' Arc is':

(a) Receptor → Sensory neuron → Rely neuron → Effector

(b) Receptor → Rely neuron → Sensory neuron → Motor neuron → Effector

(c) Receptor → Motor neuron → Rely neuron → Sensory neuron → Effector

(d) Receptor → Sensory neuron → Motor neuron → Rely neuron → Effector

21. Kidney has large numbers of filtration units called as:

(a) Flatiron (b) Natron (c) Neuron (d) Nephron

22. The elongated living plants cell with irregularly thickened cell wall belongs to

(a) Collenchyma (b) Parenchyma (c) Fibers (d) Sclerenchyma

23. The breakdown of pyruvate using oxygen takes place in

(a) Mitochondria (b) Chloroplast (c) Ribosomes (d) Lysosomes

24. If $a=-(\sqrt{35})^2$, then the value of a^2-1/a^2 is:

(a) $2(6+\sqrt{35})^2$ (b) $4(6+\sqrt{35})^2$ (c) $-24\sqrt{35}$ (d) $24\sqrt{35}$

25. Which of the following is an irrational number between 2 and 3?

(a) 2.357357 (b) 2.101001000101…..

(c) 2.05131313….. (d) 2.579

26. Consider the following statements:

Let P(x) and Q(x) be two different polynomials with real coefficients of degrees m and n respectively, where m≥0 and n≥0, then

Statement I: deg{P(x)-Q(x)}≤d
Statement II: deg{P(x)*Q(x)}=m+n

where 'd' is defined as

d = m if m>n

= n if n>m

= m or n if m=n

and 'deg' stands for degree of the polynomial. In your opinion:

(a) Only statement II is true

(b) Both the statements I and II are true

(c) Both the statements I and II are false

(d) Only statement I is true

27. If the polynomial $2x^4 +7 x^3 -5x^2 +24x -16$ is divided $x^2 +4x +k$, according to the division algorithm for the polynomials, the remainder comes out to be x+a, then k and a will be respectively:

(a) 3,-1 (b) -3,-1 (c) -3,1 (d) 3,1

28. If a triangle ABC one of the angle is 25% more than the sum of other two. Then the largest angle of the triangle is:

(a) 120^0 (b) 110^0 (c) 100^0 (d) None of these

29. The perimeter of an isosceles triangle is 20 cm. if each equal side is twice the base then the length of the three sides of the triangle in cm, are:

(a) 6,6,8 (b) 4,4,12 (c) 7,7,6 (d) 8,8,4

30. For what value of 'a' does the following pair of linear equations is inconsistent:

$2x +3 y=7,(a-1)x+(a+1)y=3a^2 -1$

(a) 5 (b) 6 (c) 7 (d) 8

31. A train covered a certain distance at a uniform speed. If the train would have been 10 km/hr faster. It would have taken 2 hours less than the scheduled time. If the train were slower by 10 km/hr faster. It would have taken 2 hours less than the scheduled time. If the train were slower by 10 km/hr. it would have taken 2 hours less than the scheduled time. If the train were slower by 10 km/hr. it would have taken 3 hours more than the scheduled time. The distance covered by the train will be:

(a) 1200 km (b) 1000 km (c) 800 km (d) 600 km

32. The roots of the quadratic equation $25x^2 +20x +7=0$ are:

(a) Real roots (b) No real roots

(c) Real and unequal (d) Real and equal

33. The real value of p for which the equation $x^2 +2x +(p^2 +1)=0$ has real root is:

(a) 2,-3 (b) -2,3 (c) 2,3 (d) No real value

34. The altitude of a right triangle is 5cm less than the base x cm and the hypotenuse is 6 cm. the quadratic representation of the above situation is:

(a) $2x^2 -10x -11=0$ (b) $x^2 -5x-6$ (c) $x^2 +x-29$ (d) $2x^2 +10x-11=0$

35. If $\log_{10} 2$, $\log_{10}(2^x - 1)$ and $\log_{10}(2^x + 3)$ are three consecutive terms of an arithmetic progression, then:

(a) x=0 (b) x=1 (c) x= $\log_2 5$ (d) x=$\log_{10} 2$

36. Consider the following statements: If a, b, c, d, e are in an arithmetic progression then: Statement 1: $\frac{a}{x}, \frac{b}{x}, \frac{c}{x}, \frac{d}{x}, \frac{e}{x}$ will be in an arithmetic progression, where x≠0, Statement II: There exist b_1, c_1, d_1 , e are in an arithmetic progression where b≠ b_1, c≠c_1, d≠d_1 in your opinion,

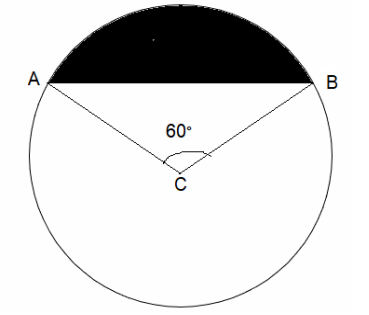
(a) Statement I is true and Statement II is false

(b) Statement I is false and Statement II is true

(c) Both Statement I is and Statement II are true

(d) Both Statement I and Statement II are false

37. In the adjoining figure ABC is an equilateral triangle and C is the centre of the circle, A and B lie on the circle. What is the area of the shaded region, if the diameter of circle is 28 cm ?



(a) $(102\frac{2}{3} - 49\sqrt{3})$ cm^2 (b) $(103\frac{2}{3} - 98\sqrt{3})$ cm^2

(c) $(109 - 38\sqrt{3})$ cm^2 (d) None of these

38.If the radius of cylinder is doubled but height is reduced by 50% the percentage change in volume is:

(a) 50% (b) 75% (c) 100% (d) 25%

39. The mean of 7 observations is 8, A new observation 16 is added. The mean of 8 observation is:

(a) 12 (b) 9 (c) 8 (d) 24

40. The following frequency distribution

x:	12	15	17	20	24
y:	3	7	9	10	4

is classified as:

(a) Continuous distribution (b) Discrete distribution

(c) Cumulative distribution (d) Both (a) and (b)

41. In an equilateral triangle ABC,D is a point on side BC such that BD=$\frac{1}{3}$ BC, then the ratio AD^3 :AB^2

(a) 9:7 (b) 1:3 (c) 3:1 (d) 7:9

42. Which one is not the Euclid's postulate?

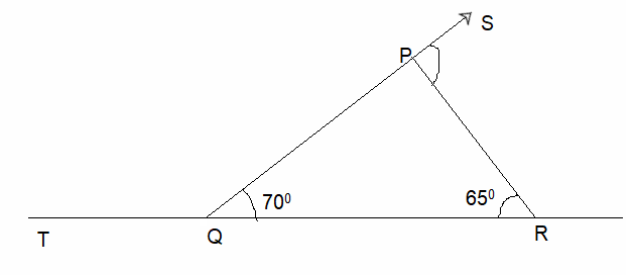
(a) A circle can be drawn with any centre and radius

(b) A straight line way be drawn from any one point to any other point

(c) A terminated line can be produced definitely

(d) All right angles are equal to one another.

43. In the given figure, side QP and RQ of Δ PQR are produced to points S and T respectively. If < PRQ=65^0 and < PRQ=70^0 , then the <SPR is



(a) 45^0 (b) 135^0 (c) 65^0 (d) 110^0

44. The moon is about 384000 km from the earth and its path around earth is circular. The moon takes 24 hours to complete one orbit. The speed at which the moon orbits the earth in km/hour is:

(a) 16000 (b) 100571 (c) 50240 (d) 12560

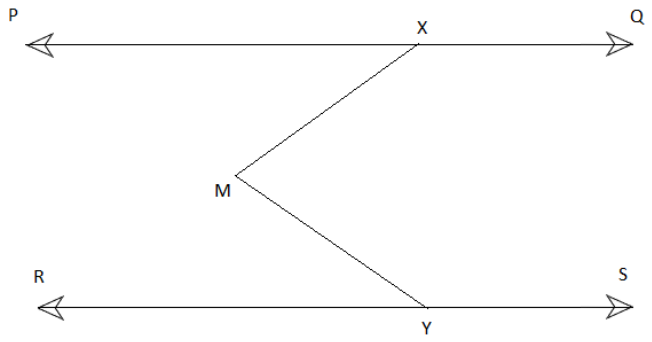
45. ABCD is a parallelogram in which P and Q are mid points of opposite sides AB and CD, If AQ intersects DP at S and BQ intersects CP at R, then the total number of parallelogram are:

(a) 2 (b) 5 (c) 6 (d) 4

46. If Cot A + Cos 75˚ =Tan5˚ + Sin 15° where A lies between 0˚ and 90˚, then the value of A is:

(a) 85^0 (b) 90^0 (c) 95^0 (d) 70^0

47. In the figure. If PQ || RS, ∠MYR=40^0 and ∠XMY=85^0, then ∠MXQ is:



(a) 125^0 (b) 95^0 (c) 135^0 (d) 140^0

48. From each corner of a square of side 7 cm, a quadrant of circle of radius 2cm is cut and also a circle of diameter 3 cm is cut, the area of remaining portion of the is (in cm^2):

(a) 9.714 (b) 38.795 (c) 29.375 (d) 19.625

49. A triangular park ABC has sides in the ration of 3:5:7 and its perimeter is 300 m. A farmer has to put a fence all around it with barbed wire at the rate of Rs. 30 per meter leaving a space 3.5 m wide for gate on one side. The area of park and cost of fencing is respectively:

(a) 15000 $\sqrt{3}$ m^2 and Rs.8895 (b) 15000 $\sqrt{15}$ m^2 and Rs.8895

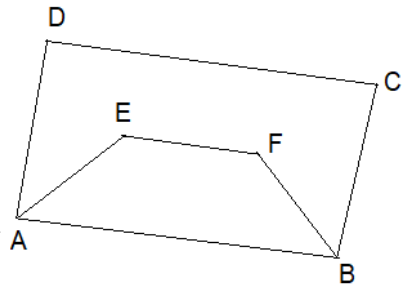
(c) 15000 $\sqrt{15}$ m^2 and Rs.9895 (d) 15000 $\sqrt{3}$ m^2 and Rs.9895

50. The ratio in which the line segment joining the points (-3,10) and (6,-8) is divided by (-1,6) is:

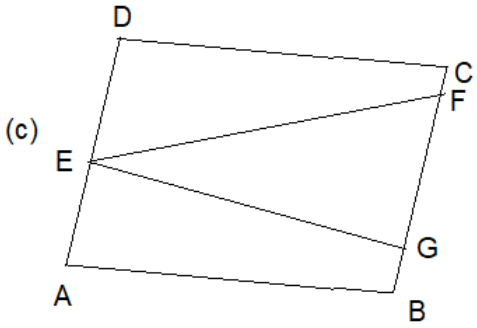
(a) 2:7 (b) 7:2 (c) 1:1 (d) 3:7

51. Which of the following figure lie on the same base and between the same parallels:

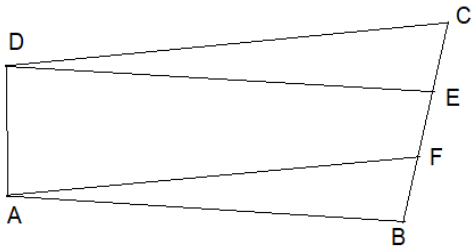
(a)



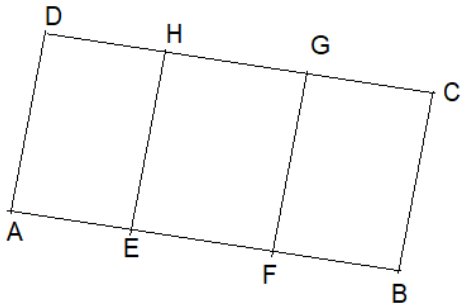
(c)



(b)



(d)



52. The solution of:

$(5\cos^2 60 - 4\sec^2 30 - \tan^2 45)/\sin^2 30 + \cos^2 30$

(a) $\frac{61}{12}$ (b) $\frac{43-24\sqrt{3}}{11}$ (c) $-\frac{61}{12}$ (d) $-\frac{12}{61}$

53. If A(-4,-2), B(-3,-5), C(3,-2) and D(2,3) are the vertices of a quadrilateral, then the area of quadrilateral ABCD is (in square units):

(a) 53 (b) 28 (c) 19 (d) 32

54.Who among the following was conferred with the Indira Gandhi award for national integration on October 31,2015?

(a) C.N.R. Rao (b) E. Sreedharan (c) Karan Singh (d) P.V Rajagopal

55. Who among the following is the author of Dreaming Big My Journey to connect India released in October 2015

(a) Son Mittal (b) Sam Pitroda (c) Kiran Karnik (d) Rajendra Pawar

56. President of India. Pranab Mukherjee recently announced to impose the president's rule in which of the following state?

(a) Kerala (b) Arunachal Pradesh (c) Andhra Pradesh (d) Karnataka

57.Which of the following award is given to recognize outstanding achievement in sports?

(a) Kerala (b) Arunachal Pradesh (c) Andhra Pradesh (d) Karnataka

58. Azlan Shah Trophy is associated with which sports?

(a) Football (b) Hockey (c) Cricket (d) Volleyball

59. Which of the following is the highest award in the field of literature in India?

(a) Sahitya Academy Award (b) Kabir Samman

(c) Padma Bhusan (d) Gyanpith Award

60. Indian-born Nobel Prize winner Venkat Rat Krishnan is associated with?

(a) Physics (b) Medicine (c) Economics (d) Chemistry

61.Which city has shut 2,500 firms this year to fight pollution?

(a) Singapore (b) Delhi (c) Shanghai (d) Beijing

62.Fulll form of BRICS

(a) Brazil, Russia, India, China and South Africa

(b) Brazil, Russia, Indonesia, China and South Africa

(c) Brazil, Russia, India, China and South Africa

(d) Brazil, Russia, India, China and Singapore

63.The first women film star nominated to the Rajya Sabha was:

(a) Nargis Dutt (b) Shabana Azmi (c) Madhubala (d) Meena Kumari

64.In which year Sir Syed Ahmed Khan founded the Scientific Society?

(a) 1861 (b) 1862 (c) 1863 (d) 1865

65. Mohammadan Literacy Society was founded in 1863 in Calcutta by:

(a) Mirza Ghulam Ahmad (b) Sir Syed Ahmad

(c) Justice Mahmood (d) Nawab Abdul Latif

66. Tansen was court musician of which king?

(a) Baz Bahadur (b) Krishna Deva Rai (c) Akbar (d) Ibrahim Adil Shah

67. Who authored the book 'Humayun Nama'?

(a) Jahagir (b) Abdul Fazal (c) Gulbadan (d) Noor Jahan

68. Amir Khusru was disciple of which Sufi Saint?

(a) Nizamuddin Auliya (b) Shaikh Burhan (c) Baba Farid (d) Qutban

69. The first woman who sucked the Prophet Muhammad (PBUH) after his mother was:

(a) Thuwaibah (b) Halima (c) Shamama (d) Hanna

70. What is the name of grandfather of Prophet Muhammad (PBUH)?

(a) Abdul Muttalib (b) Abdul Lahab (c) Abdul Obaid (d) Abdul Talha

71. Who constructed Alai Darwaza, a gateway to the enclosure of the Quwat-ul-Islam mosque in Delhi??

(a) Jalaluddin Khilji (b) Alauddin Khilji (c) Ghayasuddin Khilji (d) Ikhteyar Khilji

72. Itmaad-ud-daula, whose tomb is built at Agra, was father in law of which Mughal emperor?

(a) Akbar (b) Jahangir (c) Shahjahan (d) Aurangzeb

73. At the age of twelve, Prophet Muhammad (PBUH) travelled to Syria with his uncle. What is the name of that Uncle?

(a) Abu Talha (b) Abu Talib (c) Abu Taif (d) Abu Taba

74. The area under speed-time graph represents a physical quantity which has the unit of:

(a) m (b) m^2 (c) ms^{-1} (d) ms^{-2}

75. Which of the following statement is incorrect regarding electromagnet?

(a) Magnetism of an electromagnet can be switched on or off as desired.

(b) Magnetism depends on current passing through the coils of an electromagnet.

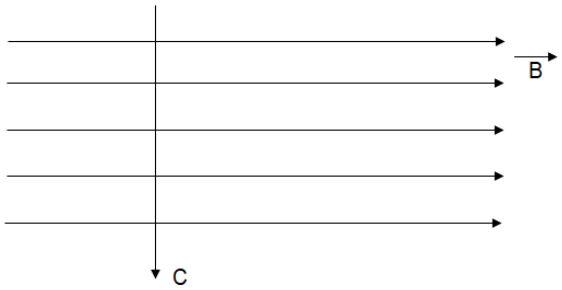
(c) The strength of an electromagnet can be changed by changing number of turns in its coil

(d) The polarity of an electromagnet is fixed and cannot be changed.

76. A 4Ω resistance is doubled on it. Then its new resistance will be:

(a) 4 Ω (b) 2 Ω (c) 1 Ω (d) 8 Ω

77. An electron enters in a magnetic field at right angle (see figure below).The direction of force acting on the electron will be:



(a) To the right (b) To the left (c) Out of the page (d) Into the page

78. A positively charged particle projected north by a magnetic field. The direction of magnetic filed is::

(a) Towards south (b) Toward east (c) Downward (d) Upward

79. The Phenomenon of electromagnetic induction is:

(a) The process of changing a body

(b) The process of generating magnetic field due to current passing through a coil

(c) Producing induced current in a coil due to relative between coil and magnet

(d) The process of rotating a coil of an electric motor

80. A strong bar magnet is placed vertically above a horizontal wooden board. The magnetic lines of force will be

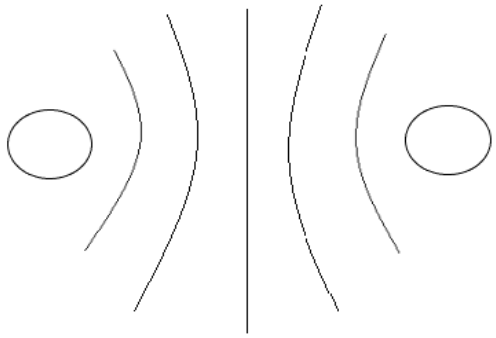
(a) Only in horizontal plane around the magnet

(b) Only in vertical plane around the magnet

(c) In horizontal as well in vertical plans around the magnet

(d) In all the plane around the magnet

81. The diagram given below represents magnetic field caused by a current carrying conductor which is:



(a) A long straight wire (b) A circular coil

(c) A solenoid (d) A short straight wire

82. An object is put in three liquids having densities one by one. The object floats with $\frac{1}{9}$, $\frac{2}{11}$, $\frac{3}{7}$ parts of its volume outside the surface of liquids of densities d1, d2 and d3 respectively, which of the following is the correct order of the densities of the three liquids?

(a) d1>d2>d3 (b) d2>d3>d1 (c) d1<d2<d3 (d) d3>d2>d1

83.Four balls A,B, C & D displace 10 ml, 24 ml, 15 ml and 12 ml of a liquid respectively, when immersed completely. The ball which will undergo the maximum apparent loss in the weight will be::

(a) A (b) B (c) C (d) D

84. The gravitational force between two objects is F. how will this force changes when distance between them is reduced to half?

(a) F/4 (b) 4F (c) 2F (d) F/2

85. Which among the following bodies is more energetic ?

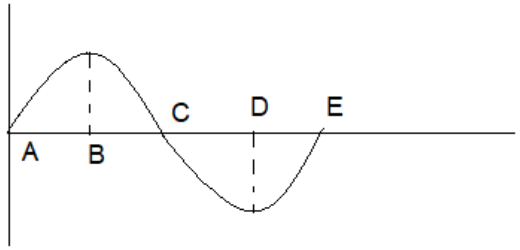
(a) mass M & speed 2V (b) mass M & speed V

(c) mass 2M & speed V (d) mass 3M & speed V/2

86. A red of mass ‘m’ & length ‘l’ is lying on a horizontal table. Work done in making it stand on one end will be:

(a) mgl (b) mgl/2 (c) mgl/4 (d) 2mgl

87. If the sound wave is produced by vibrating tuning fork shows in figure then half of time period is represented by:



(a) AB (b) BD (c) DE (d) AE

88. A boy 1.5 m tall with his eyes level at 1.38 m stands before a mirror fixed on a wall. What should be the minimum length of the mirror so that he can view himself fully?

(a) 1.5 m (b) 3.0 m (c) 0.75 m (d) 1.38 m

89. An erect image 3 times of the size of the object is object is obtained with a concave mirror of radius of curvature 36 cm. what is the position of the object from the mirror?

(a) 3 cm (b) -6 cm (c) 18 cm (d) -12 cm

90. The power of a plano-convex lens of refractive index 1.5 and radius of curved surface 15 cm would be:

(a) 3.33 dioptre (b) 1.5 dioptre (c) 30 dioptre (d) 15 dioptre

91. A change of state from solid to gas is called

(a) Fusion (b) Fission (c) Sublimation (d) Evaporation

92. The number of particles in 8g O_2 is:

(a) 1.75×10^{23} (b) 1.89×10^{23} (c) 1.99×10^{23} (d) 1.51×10^{23}

93. In periodic table, period II has following elements:

(a) Li, Na, K, Rb, Cs, FR (b) B, Be, O, N, Li, C

(c) Be, Mg, Ca, Sr, Ba, Ra (d) Na, Mg, Al, Si, P, S

94. Orange juice was diluted 10 times. Its pH will:

(a) Increase (b) Decrease

(c) remain unchanged (d) will become neutral

95. What is the correct order of relative activities of metals:

(a) K<Na<Ca>Mg (b) Na>K>Ca>Mg

(c) Na>K>Mg>Ca (d) Mg>Ca>K>Na

96. How many moles of 3.6 g of water will contain?

(a) 0.2 moles (b) 0.5 moles (c) 1.0 moles (d) 2.0 moles

97. Which one of the following is not possible?

(a) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$ (b) $Pb + FeSO_4 \rightarrow PbSO_4 + Fe$

(c) $Cu + 2AgNO_3 \rightarrow Cu(NO_3)_2 + Ag$ (d) $Zn + MgSO_4 \rightarrow ZnSO_4 + Ag$

98.Milky colour formation in lime water on passing CO_2 gas is due to?

(a) Formation $CaCO_3$ (b) Formation $Ca(HCO_3)_2$

(c) Formation Cao (d) Formation of $CaCl_2$

99. Which of the following statement is not true about metal oxides?

(a) Most of the metal oxides are basic in nature

(b) Most of the metal oxides are insoluble in water

(c) Most of the metal oxides are acidic in nature

(d) Some metal oxides are amphoteric in nature

100. For a reaction

$3MnO_2 (s) + 4X(s) \rightarrow 3 Mn (l) + 2X_2O_3 (s)$

Which of the following metals substitute 'X'?

(a) Al (b) Ag (c) Cu (d) Hg

Answer Key 2016

1.(c)	2.(c)	3.(b)	4.(b)	5.(c)	6.(c)	7.(a)	8.(d)	9.(b)	10.(c)
11.(a)	12.(a)	13.(d)	14.(b)	15.(c)	16.(a)	17.(a)	18.(b)	19.(b)	20.(a)
21.(d)	22.(a)	23.(a)	24.(c)	25.(b)	26.(c)	27.(b)	28.(c)	29.(c)	30.(a)
31.(d)	32.(b)	33.(d)	34.(a)	35.(c)	36.(a)	37.(a)	38.(c)	39.(b)	40.(b)
41.(d)	42.(c)	43.(b)	44.(b)	45.(d)	46.(a)	47.(c)	48.(c)	49.(a)	50.(a)
51.(*)	52.(c)	53.(b)	54.(d)	55.(b)	56.(b)	57.(b)	58.(b)	59.(d)	60.(d)
61.(d)	62.(a)	63.(a)	64.(b)	65.(d)	66.(c)	67.(c)	68.(a)	69.(a)	70.(a)
71.(b)	72.(b)	73.(b)	74.(a)	75.(d)	76.(c)	77.(d)	78.(d)	79.(c)	80.(d)
81.(b)	82.(*)	83.(b)	84.(b)	85.(a)	86.(b)	87.(b)	88.(c)	89.(d)	90.(a)
91.(c)	92.(d)	93.(b)	94.(a)	95.(a)	96.(a)	97.(b)	98.(a)	99.(c)	100.(a)

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2017

1. The value of m in -3(m-2) >12 is

(a) m>-2 (b) m<2 (c) m<-6 (d) m<-2

2. If $(x^{100}+2x^{99}+k)$ is divisible by (x+1), then the value of k is

(a) 1 (b) 2 (c) -2 (d) -3

3. Two complementary angles are such that twice the measures of the one is equal to three times the measure of the other. The larger of the two measures

(a) 72^0 (b) 54^0 (c) 63^0 (d) 36^0

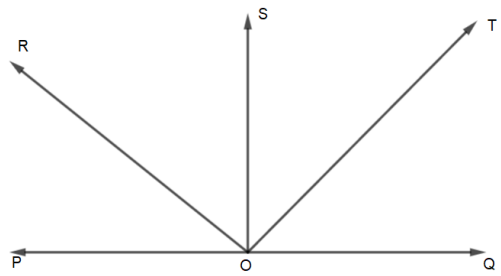
4. Points A and B are 60 km apart. A bus starts from A and another from Bat the same time. If they go in the same direction they meet in 6 hours and if they go in opposite directions, they meet in 2 hours. The speed of the bus with greater speed is

(a) 10 km/hr (b) 20 km/hr (c) 30 km/hr (d) 40 km/hr

5.Find the ratio in which the line segment joining A(1,-5) and B(-4,5) is divided by the x-axis

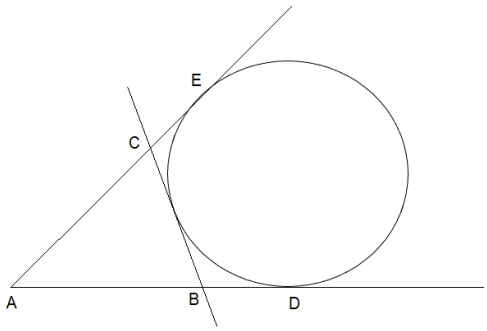
(a) 1:1 (b) 2:1 (c) 3:2 (d) 1:2

6. In the given figure, ray OS stands on a line POQ, ray OR and ray OT are angle bisectors of ∠POS and ∠SOQ respectively. If ∠POS=y, ∠ROT equals



(a) 50^0 (b) 70^0 (c) 90^0 (d) 120^0

7. In the adjoining figure AD, AE and BC are tangents to the circle at D, E, F respectively. Then



(a) 4AD-AB+BC+AC (b) 3AD-AB+BC+AC

(c) 2AD-AB+BC+AC (d) AD-AB+BC+AC

8. The pillars of a building are cylindrically shaped. If each pillar has a circular base of radius 20 cm and height 10 m, concrete required to build 14 such pillars

(a) 8.8 m^3 (b) 1.256 m^3 (c) 17.6 m^3 (d) 12.56 m^3

9. A die is thrown 1000 times with the frequencies for the outcomes 1,2,3,4,5,5 as given in the table

Outcome	1	2	3	4	5	6
Frequency	179	150	157	149	175	190

(a) 0.81 (b) 0.19 (c) 0.15 (d) 1.0

10. The mean of 15 observation is 36. The mean of the first 13 observations is 32 and that of last 13 observations is 39. What is the value of the 13^{th} observation?

(a) 20 (b) 23 (c) 32 (d) 40

11. Rational form of $0.\overline{001}$ is

(a) 1/99 (b) 1/199 (c) 1/999 (d) 1/111

12. If $\frac{x}{y} + \frac{y}{x} = 1$, where $x \neq 0$, $y \neq 0$, then the value of (x^3-y^3) is

(a) 1 (b) -1 (c) 0 (d) ½

13. The ratio of incomes of two persons is 9:7 and the ratio of their expenditure is 4:3. If each of them saves Rs.200 per month. Find their monthly incomes

(a) Rs.1200, Rs.800 (b)Rs.1800, Rs1400
(c) Rs.1000, Rs.7000 (d) Rs.9000, Rs.7000

14. X takes 3 hours more than Y to walk 30 km. But if X doubles his pace, he is ahead of Y by $1\frac{1}{2}$ hours, Then, the speeds of X and Y are

(a) $\frac{10}{3}$ km/hr, 10 km/hr (b) 10 km/hr, $\frac{10}{3}$ km/hr
(c) $\frac{10}{3}$ km/hr, 5 km/hr (d) 10 km/hr, 5 km/hr

15. A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. The speed of the stream is

(a) 6 km/h (b) 54 km/h (c) 60 km/h (d) 8 km/h

16. A person on tour has Rs.360 for his expenses. If he extends his tour for 4 days. Ha has to cut down his daily expenses by Rs.3. Then the original duration of the tour is

(a) 20 (b) 24 (c) 22 (d) 18

17. A rectangular park is to be designed whose breath is 3 m less than its length. Its area is to be 4 square meters more than the area of a park that has already been made in the shape of an isosceles triangle with its base as the breadth of the rectangular part and of altitude 12 m. The length and breadth are:

(a) 7 m, 4 m (b) 8 m, 5 m (c) 6 m, 3 m (d) 9 m, 6 m

18. How many terms of the AP 24, 21, 18 __ must be taken so that their sum is 78?

(a) 4 (b) 13 (c) 4 and 13 both (d) None of these

19. If A(5,2), B(2,-2) and C(-2,t) are the vertices of right angled triangle with $\angle B=90^0$, then value of t:

(a) 2 (b) 3 (c) 1 (d) 4

20. In a $\triangle$, the medians BE and CF intersects at G, AGD is a line meeting BC in D. If GD=1.5 cm then AD is equal to :

(a) 2.5 cm (b) 3 cm (c) 4.5 cm (d) 4 cm

21.If 3x=cosec θ, and $\frac{3}{x}$ = cot θ , then $3(x^2 -1/x^2)$=?

(a) $\frac{1}{21}$ (b) $\frac{1}{81}$ (c) $\frac{1}{3}$ (d) $\frac{1}{9}$

22. If A,B and C are interior angles of a triangle ABC, then $\sin(\frac{B+C}{2})$=

(a) Sin A/2 (b) Cos A/2 (c) -Sin A/2 (d) -Cos A/2

23. sec A (1-sinA)(sec A + tan A) equals:

(a) 0 (b) 2 (c) 1 (d) -1

24. From a point on a bridge across a river, the angles of depression of the banks on opposite sides of the river are 30^0 and 45^0 respectively. If the bridge is at a height of 3m from the banks. The width of the river is:

(a) $3\sqrt{3}$ m (b) 3 m (c) $3(\sqrt{3}$ -1)m (d) $3(\sqrt{3}$ +1)m

25. The cost of fencing a circular field at the rate of Rs.24/meter is Rs.5280. The field is to be ploughed at the rate of Rs.1 per m^2. The cost of ploughing the field is:

(a) Rs.1925 (b) Rs.3850 (c) Rs.2925 (d) Rs.5280

26. A cone of height 24 cm and radius of base 6 cm is made up of modelling clay. A child reshapes it in from of sphere. The radius of sphere is:

(a) 8 cm (b) 6 cm (c) 4 cm (d) 2 cm

27. A copper rod of diameter 1 cm and length 8cm is drawn into a wire of length 18 m of uniform thickness. The thickness of the wire is:

(a) 1/30 cm (b) 1/90 cm (c) 1/15 cm (d) 1/60 cm

28.If the median of the following series of observation is 40

30,31,35,x,x+2,45,48,49

(a) 41 (b) 39 (c) 42 (d) 43

29. In a musical chair game, the person playing the music has been advised to stop playing the music at any time within 2 minutes after she starts playing. What is the probability that the music will stop within the first half-minutes after starting?

(a) 1/4 (b) ½ (c) 1/8 (d) 1

30. A bag contains 4 red balls and some blue balls. If the probability of drawing a blue ball is double that of red ball, find the number of the blue balls in the bag:

(a) 10 (b) 8 (c) 6 (d) 12

31.Which is highest honour of award given for achievement in sports:

(a) Arjuna Award (b) Dronacharya Award
(c) Dhayan Chand Award (d) Rajiv Gandhi Khel Ratna Award

32.Which is highest honour of award given for achievement in sports:

(a) Ranji Trophy (b) Agha Khan Cup
(c) Davis cup (d) Walker Cup

33. The Kawal Tiger Reserve (KTR) is location in the Indian State of::

(a) Telangana (b) Nagaland (c) Manipur (d) Sikkim

34. The radius of the earth is approximately _____ kms. :

(a) 4000 (b) 5000 (c) 6000 (d) 7000

35. Which state has become the first Indian to establish cashless system for distribution of food grains? :

(a) Karnataka (b) Kerala (c) Punjab (d) Gujrat

36. E. Ahmed, who passed away recently. Was Member of parliament (MP) from which Lok Sabha constituency?

(a) Emakulam (b) Mallapuram (c) Kozhikode (d) Thrissur

37. Who won the Monaco Grand Prix in 2016?

(a) Femando Alonso (b) Nico Hulkenberg

(c) Kimi Rakkonen (d) Lewis Hamilton

38. “A Tale of Two Cities” and “ Oliver Twist” was written by

(a) John Milson (b) William Shakespeare

(c) Lewis Carroll (d) Charles Dickens

39. Where was 2016 Summer Olympics held?

(a) Rio de janeria (b) Los Angeles (c) Montreal (d) Paris

40.Who was the first President of United States of America?

(a) Donald Trump (b) George Washington

(c) George Bush (d) Abraham Lincoln

41. Madrasatul Uloom was establish by Syed Ahmed Khan in:

(a) 1895 AD (b) 1865 AD (c) 1875 AD (d) 1870 AD

42. Which of the following was not a Mughal emperor?

(a) Babur (b) Bahadur Shah (c) Sher Shah (d) Aurangzeb

43. Whose tomb is situated in Delhi?

(a) Moinuddin Chishti (b) Nizamuddin Aulia
(c) Sheikh Ahmed Sir Hindi (d) Baba Farid Ganjshakar

44. Who gave the slogan 'Inquilab Zindabad'

(a) Mahatma Gandhi (b) Bhagat Singh
(c) Molana Hasrat Mohani (d) Molana Abdul Kalam Azad

45. The first Indian expectation of Muhmmad Ghauri was:

(a) 1225 AD (b) 1175 AD (c) 1078 A (d) 975 AD

46. What is the old name of Madinah-tul-Munawarh?

(a) Taif (b) Yasrib (c) Hijaz (d) Yemen

47. Uncle of Prophet, Hamzah was killed in the:

(a) Battle of Badar (b) Battle of Ahzab

(c) Battle of Yamamah (d) Battle of Uhad

48. Before the Prophethood Muhammad (PBUH) was:

(a) A traveller (b) A trader (c) A farmer (d) A herdsman

49 The first Prophet of Allah was:

(a) The Prophet Nuh (b)The Prophet Ibrahim

(c) The Prophet Ishaq (d) The Prophet Adam

50. The Life Hereafter is known in Islam as:

(a) Qayamat (b) Mahshar (c) Jannat (d) Akhirat

51. The position of An object moving along x-axis is given by $x=a+bt^2$ where a=8.5 m, b=2.5 m/s^2 and t is measured in seconds. What is the average velocity between t=2s and t=4s?

(a) 15 m/s (b) 10 m/s (c) 20 m/s (d) 12 m/s

52. The displacement of a wave travelling in x-direction is given by $y=10^{-3}\sin(800t-2x+\pi/3)$ Where x is expresses in meters and t in seconds. The speed of wave motions(in ms^{-1}) is:

(a) 400 (b) 800 (c) 1200 (d) 200

53. In a tug of war, a 100 kg mass is hanged from the midpoint of the rope. The force that each side should exert to make the rope horizontal again is

(a) 980 N (b) 9800/2 N (c) 9800 N (d) ∞

54. A machine gun has a mass of 20 kg. It fires 35 gm bullets at the rate of 400 bullets per minutes with a speed of 400 m/s. What force must be applied to the gun to keep it in position?

(a) 93.3 N (b) 933 N (c) 9.33 N (d) 9330 N

55. Two masses of 1 g and 9 g are moving with equal kinetic energies. The ratio of the magnitudes of their respective linear momenta is:

(a) 1:9 (b) 9:1 (c) 1:3 (d) 3:1

56. An object of mass 40 kg is raised to a height of 5 m above the ground. If the object is allowed to fall, find its kinetic energy when it is half-way down ($g=10\ m/s^{2)}$.

(a) 2000 J (b) 1000 J (c) 200 J (d) 100 J

57. If the two liquids of same mass but densities d1 and d2 respectively are mixed, then the density of mixture is:

(a) $d=\frac{d1+d2}{2}$ (b) $d=\frac{d1+d2}{2d1d2}$ (c) $d=\frac{2d1d2}{d1+d2}$ (d) $d=\frac{d1d2}{d1+d2}$

58. A boat having a length of 3 m and breadth of 2m is floating on a lake. The boat sinks by 1 cm when a man gets on it. The mass of the man will be (density of water=100 kg/m^3)

(a) 60 kg (b) 72 kg (c) 12 kg (d) 128 kg

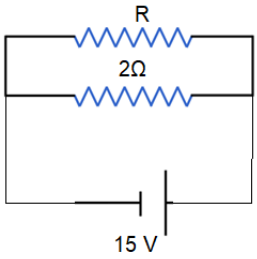
59. The distance travelled by sound in air, when tuning fork of frequency 560HZ makes 30 vibrations, will be : (speed of sound in air=336 m/s)

(a) 18 cm (b) 1.8 m (c) 18 m (d) 0.18 m

60. The pitch of sound is:

(a) Directly proportional to frequency of vibration
(b) Inversely proportional to frequency of vibration
(c) Directly proportional to amplitude of vibration
(d) Inversely proportional to amplitude of vibration

61. If in the circuit, power dissipation is 150 W, then R is



(a) 2 Ω (b) 6 Ω (c) 5 Ω (d) 4 Ω

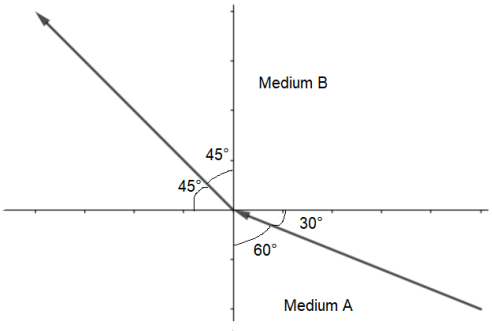
62. Two heater wires of equal length are first connected in series and then in parallel. The ratio of heat produced in the two cases is

(a) 2:1 (b) 1:2 (c) 4:1 (d) 1:4

63. When the same current is passed for the same time through different electrolyte solutions, the amount of substance deposited at the electrodes are in the ratio of:

(a) Chemical equivalent weights (b) Atomic weights
(c) Specific gravities (d) Atomic Numbers

64. Figures shows a ray of light as it travels from medium A to medium B. Refractive index of medium B, relative to medium A is:



(a) $\frac{\sqrt{3}}{\sqrt{2}}$ (b) $\frac{\sqrt{2}}{\sqrt{3}}$ (c) $\frac{1}{\sqrt{2}}$ (d) $\sqrt{2}$

65. Power of a lens is -2.0 D. The focal length and type of lens are respectively:

(a) -50 cm, convex, lens (b) -50 cm, concave lens

(c) +50 cm, convex lens (d) +50 cm, concave lens

66. Which of the following is not an example of a bio-mass energy source?

(a) Wood (b) gobar-gas (c) nuclear energy (d) coal

67. Uneven heating of air over and water bodies causes

(a) Winds (b) Tides (c) Rain (d) All of these

68. Which of the following energy is absorbed during the change of the state of a substance?

(a) Specific heat (b) Latent heat (c) Heat capacity (d) Heat of solution

69. The process involving the change of state from solid to gas is:

(a) Boiling (b) Melting (c) Fusion (d) Submission

70. Which one of the following properties is not correct for a suspension?

(a) Suspension is a heterogeneous mixture

(b) The particles of suspension can be seen by the naked eye

(c) The particles of a suspension scatter a beam of light passing through it and make its path visible

(d) They can not be separated from the mixture by the process of filtration

71. Face cream is a

(a) Gel-type colloids (b) From type colloids

(c) Aerosol type colloids (d) Emulsion type colloids

72. The mass of one molecules of methane is

(a) 16 g (b) 32 g (c) 6.023×10^{23} g (d) 2.66×10^{23} g

73. The number of neutrons present in 26 g of ${}_6C^{13}$ are :

(a) 7 (b) 6 (c) 8.43×10^{24} (d) 4.21×10^{23}

74. In Rutherford atomic model a particles were stroked on:

(a) Aluminium (b) Gold (c) Silver (d) Titanium

75. Respiration is:

(a) An exothermic process (b) An endothermic process
(c) Neither be exothermic non endothermic (d) can be exothermic non endothermic

76. Which gas is liberated when sodium bi carbonate is reacted with aqueous hydrochloric acid?

(a) N_2 (g) (b) CO_2 (g) (c) O_2 (g) (d) CO (g)

77. Leaves of nettle have stinging hair and secretes

(a) Acetic acid (b) Citric acid (c) Methanoic acid (d) Oxalic acid

78. What is the normality of 0.3 M H_3PO_4 when it undergoes the reaction as:

$H_3PO_4 + 2OH^- \rightarrow HPO_3^{-2} + 2H_2O$

(a) 0.3 N (b) 0.15 N (c) 0.6 N (d) 0.9 N

79. A solution turns red litmus blue, its PH be like to be

(a) 1 (b) 4 (c) 5 (d) 10

80. Buckminster fullerene is an allotropic from of

(a) Phosphorus (b) Sulphur (c) Carbon (d) Tin

81. The correct name of the below compound is

$HC{\equiv}CCH_2(CH_2)_3CH_3$

(a) Butyne (b) Propyne (c) Heptyne (d) Hexyne

82. Benzene with molecular formula, C_6H_6 has

(a) 6 single bonds and 6 double bonds (b) 12 single bonds and 3 double bonds

(c) 6 single bonds and 3 double bonds (d) 18 singles bonds only

83. Heating of ethanol with excess concentrate H_2SO_4 at 443 K produces

(a) Ethene and water (b) Acetic acid and water
(c) Acetic acid and hydrogen (d) Methanol and water

84. Which of the following metal have lowest melting point?

(a) Pb (b) Rb (c) K (d) Cs

85. The atomic number of elements which represents a metal is:

(a) 17 (b) 2 (c) 19 (d) 33

86. The major pollutant from automobile exhaust is:

(a) NO (b) CO (c) SO_2 (d) Soot

87. The largest group of animal kingdom characterized by bilateral symmetry segment body and open circulatory system is:

(a) Mollusca (b) Echinodermats (c) Arthropoda (d) Annelida

88. Which is not the characteristic of vertebrate?

(a) Presence of dorsal hollow nerve cord (b) Presence of notochord

(c) Acoelomate (d) Triploblastic

89. Oxygenation of blood in human beings occurs in:

(a) Right atrium (b) Left atrium (c) Lungs (d) Left ventricle

90. When terminal phosphate linkage in ATP molecule broken down using water, energy of _____ is released:

(a) 7 kJ/mol (b) 18.5 kJ/mol (c) 22 kJ/mol (d) 30.5 kJ/mol

91. Existence of four chambered working heart starts from:

(a) Amphibia (b) Reptilia (c) Aves (d) Mammalia

92. The breakdown of pyruvate to give carbon dioxide, water and energy take place in:

(a) Cytoplasm (b) Mitochondria (c) Chloroplast (d) Nucleus

93. Which one of the following group of animals are triploblastic and radially symmetrical?

(a) Nematoda (b) Annelida (c) Echinodermata (d) Vertebrata

94. Which is the dividing tissue presents in the growing regions of the plant?

(a) Adipose tissue (b) Meristematic tissue

(c) Protective tissue (d) Epithelial tissue

95. Which of the following is a complex tissue?

(a) Xylem (b) Phloem (c) Neither (a) nor (b) (d) Both (a) and (b)

96. Which of the following do not produce seeds?

(a) Gymnosperms (b) Angiosperms (c) Pteridophyta (d) None of these

97. Which of the following is not an example of Porifera?

(a) Euplectella (b) Sycon (c) Spongilla (d) Sea Anemones

98. The gap between two neurons is called?

(a) Synapse (b) Axon (c) Neither (a)and (b) (d) both (a) and (b)

99. The anther contains:

(a) Sepals (b) Pollen grains (c) Ovules (d) Carpel

100. An example of homologous organs is:

(a) Our arm and a dog's foreleg (b) Neither (a) nor (b)

(c) Our teeth and elephant's tusks (d) Both (a) and (b)

Answer Key 2017

1.d	2.a	3.b	4.b	5.a	6.c	7.c	8.c	9.b	10.b	11.c	12.c
13.b	14.c	15.a	16.a	17.a	18.c	19.c	20.c	21.c	22.b	23.c	24.d
25.b	26.b	27.c	28.b	29.a	30.b	31.d	32.a	33.a	34.c	35.d	36.b
37.d	38.d	39.a	40.b	41.c	42.c	43.b	44.c	45.b	46.b	47.d	48.b
49.d	50.d	51.a	52.a	53.d	54.a	55.c	56.d	57.c	58.a	59.c	60.a
61.b	62.d	63.a	64.a	65.b	66.c	67.a	68.b	69.d	70.d	71.d	72.a
73.c	74.b	75.a	76.b	77.c	78.c	79.d	80.c	81.c	82.b	83.a	84.d
85.c	86.b	87.c	88.c	89.c	90.d	91.b	92.b	93.c	94.b	95.c	96.c
97.d	98.a	99.b	100.d								

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2018

1. Which of the following is a false statement?

(a) Every positive odd integer is of the form 2q+1, where q is some integer.

(b) Every positive odd integer is of the form 4q+1 or 4q+3, where q is some positive integer

(c) Every positive od integer is of the form 6q+ or 6q+3 or 6q+5, where q is some integer.

(d) -5 and -9 are coprime integers.

2. The greatest number among 3^{50}, 4^{40}, 5^{30}, and 6^{20} is

(a) 4^{40} (b) 5^{30} (c) 6^{20} (d) 3^{50}

3. The decimal expansion of $\frac{63}{72 * 175}$ is

(a)Terminating (b) Non- terminating and non- repeating

(c) Non terminating and repeating (d) none of these

4. If the lines given by $3x + 2ky = 2$. and $2x + 5y = 0$ are parallel, then the value of k is:

(a) $-\frac{5}{4}$ (b) $\frac{2}{5}$ (c) $\frac{15}{4}$ (d) $\frac{3}{2}$

5. 8% of the voters in an election did not cast their votes. In this election, there were only two candidates. The winner by obtaining 48% of the total votes, defeated his rival by 1100 votes. The total number of voters in the election was:

(a) 21000 (b) 23500 (c) 22000 (d) 27500

6. If $ax^2 + bx + c = a(x-p)^2$, then the relation among a, b, c would be

(a) abc = 1 (b) $b^2 = ac$ (c) $b^2 = 4ac$ (d) 2b = a+c

7. The sum of all even numbers from 100 to 200 is

(a) 7450 (b) 7550 (c) 7650 (d) 7750

8. How many terms of the arithmetic series $\frac{5}{6} + \frac{2}{3} + \frac{1}{2} \ldots\ldots$ must be taken in order to obtain a sum of $-\frac{121}{2}$?

(a) 33 (b)34 (c) 35 (d) 36

9. The sum of all multiples of 7 between 0 and 500 is

(a) 13916 (b) 17892 (c) 24353 (d) 16984

10. What should be added from the following in the expression $3x^2 + 2x + \frac{1}{12x^2}$ to make it a perfect square $(x \neq 0)$

(a) 1 (b) $-2x$ (c) $2x - 1$ (d) $1 - 2x$

11. For what values of *p* is p^2-5p+6 negative?

(a) p<0 (b) 2<p<3 (c) p>3 (d) p<2

12. If one of the zeros of the cubic polynomial x^3+ax^2+bx+c is 0, then the product of the other two zeros is

(a) 0 (b) *a* (c) *b* (d) *c*

13. If (x^3+ax^2+bx+6) has ($x-2$) as a factor and leaves a remainder 3 when divided by ($x-3$), then the values of *a* and *b* are:

(a) a= -2, b= -1 (b) a= -1, b= -3

(c) a= -3 (d) a= -3, b= 1

14. Find tan Θ if Cos Θ = -12/13 and Θ lies in the third quadrant

(a) $\frac{-5}{12}$ (b) $\frac{5}{12}$ (c) $\frac{1}{4}$ (d) $\frac{5}{4}$

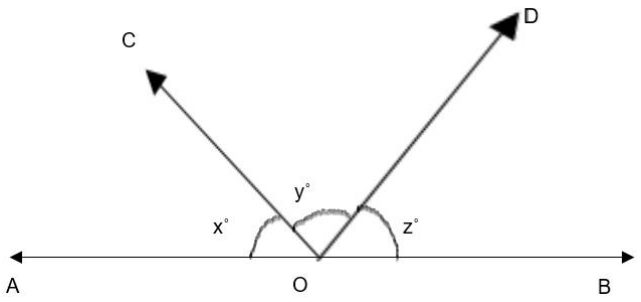
15. A person observed that he required 30 seconds less time to cross a circular ground along its diameter than to cover it once along the boundary. If his speed was 30 m/minutes, then the radius of the circular ground is (Take $\pi = \frac{22}{7}$)

(a) 5.5 m (b) 7.5 m (c) 10.5 m (d) 3.5 m

16. In a rectangle, the angle between a diagonal and a side is 45˚ and the length of this side is 10 cm. The area of the rectangle is

(a) 100 cm^2 (b) $100\sqrt{2}$ cm^2 (c) 200cm^2 (d) 200 $\sqrt{2}$ cm^2

17. In the given fig. AOB is a straight line. If *x:y:z* = 4:5:6, then *y* =

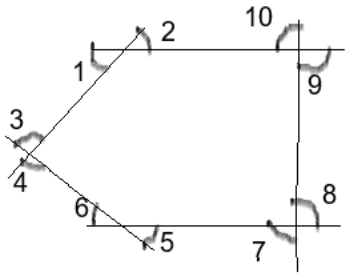


(a) 60˚ (b) 80˚ (c) 48˚ (d) 72˚

18. If C is the circumference and A is the area of circular disc. Then $\frac{C}{A} = \frac{A}{C}$ if and only if the diameter of the circular disc is

(a) 2 (b) $\frac{\pi}{2}$ (c) 4 (d) $\frac{\pi}{4}$

19. Refer the adjacent figure. The sum of the angles S = $\sum_{i=1}^{10}(\angle i)$ is

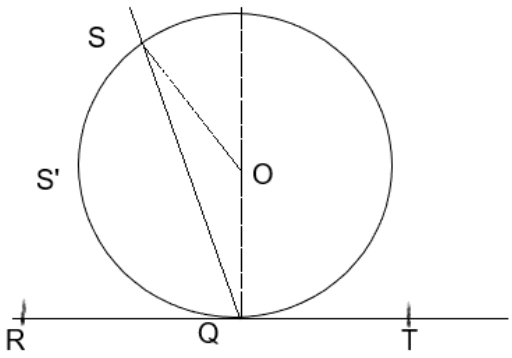


(a) 540^0 (b) 360^0 (c) 1080^0 (d) 720^0

20. If non parallel sides of a trapezium are equal, then it is

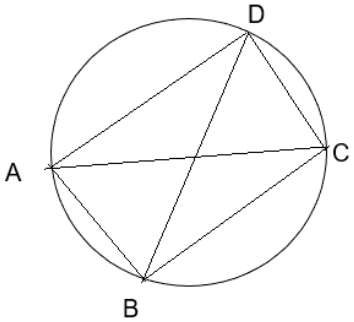
(a) a square (b) a rectangle (c) a rhombus (d) a cyclic quadrilateral

21. If are SS'Q (see figure) subtends an angle 120^0 at the centre O and RT is the tangent of the circle at Q, ∠RQS is equal to



(a) 30^0 (b) 45^0 (c) 60^0 (d) 75^0

22. In figure, ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If ∠DBC=55^0 and ∠BAC=45^0, find ∠BCD



(a) 75^0 (b) 85^0 (c) 135^0 (d) 80^0

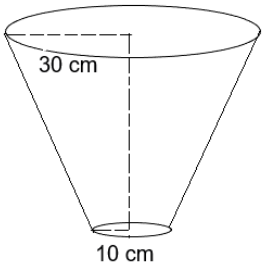
23. The ratio in which point (-4,6) divides the line segment joining the points (-6,10) and (3,-8) , is

(a) 2:7 (b) 1:2 (c) 3:4 (d) None of these

24. If the surface area of a cube is 726, then its volume is

(a) 343 (b) 729 (c) 1331 (d) 1728

25. The radii of bucket are 30 cm and 10 cm respectively. Consider the following statements



Assertion(A): The volume of the bucket will be 50000 cm^2:

Reason(R): The volume can be determined by the subtracting the volume of two cones made by increasing the curved surface in the forward direction.

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(c) (A) is false but (R) is true.

(d) (A) is true but (R) is false.

26. The mean weight of 150 students in a class is 60 kg. The mean weight of the boys is 70 kg while that of girls is 55 kg. Find the difference of number of boys and girls.

(a) 25 (b) 50 (c) 75 (d) 100

27. If p_1, p_2, ….. , p_n are the probability that certain events happen, then the probability that at least one of these events happens is

(a) $(1-p_1).\ (1-p_2)$…….. ……$(1-p_n)$

(b) $(1-p_1)+\ (1-p_2)+$…….. ……$+(1-p_n)$

(c) $1-[(1-p_1)+(1-p_2)+$…….. ……$+(1-p_n)]$

(d) $1-[(1-p_1).\ (1-p_2)$…….. ……$(1-p_n)]$

28. The weights of 15 students (in kg) recorded as 31, 35, 37, 27, 29, 32, 43, 37, 41, 28, 36, 44, 45, 42 has a median of 35 kg. If the weights 44 and 27 are replaced by 46 and 25 them the new median will be

(a) 35 (b) 36 (c) 37 (d) 34

29. A company has following information during the year.

Item	Rs. (crore)
Labour cost	10
Overheads cost	30
Materials cost	60

In a pie diagram the degree of angle of labour cost is

(a) 36^0 (b) 72^0 (c) 108^0 (d) 216^0

30. A box contains ticket numbered 2,3,4,5….100,101. One ticket is drawn at random from the box. The probability that the number on the ticket is a perfect square is

(a) $\frac{1}{10}$ (b) $\frac{4}{101}$ (c) $\frac{9}{101}$ (d) $\frac{9}{100}$

31. The term “equestrian” is related to

(a) Gymnastics (b) Archery (c) Gymkhana (d) Horse riding

32. what is the name of the first robot that has been given citizenship of Saudi Arabia?

(a) Rebeka (b) Sophia (c) Anita (d) Maviah

33. “KARAN-J” introduced recently in Indian defence system is a

(a) Helicopter (b) Tank (c) Submarine (d) Aircraft

34. Before becoming the president of India, Mr. Ram Nath Kovind was Governor of which state?

(a) Tamil Nadu (b) Bihar (c) Jharkhand (d) Uttarakhand

35. Who is the author of the book ‘Asian Drama’?

(a) K.M Panikkar (b) Gunnar Myrdal (c) Jaswant Singh (d) M.S Swaminathan

36. Which state of India has recently declared Urdu as the second official language?

(a) Telangana (b) Andhra Pradesh (c) Tamil Nadu (d) Kerala

37. In the preamble of Indian Constitution which of the following expression is used?

(a) All the people of India (b) United people of India

(c) We, the people of India (d) People of our India

38. The Khillji dynasty was founded by:

(a) Alauddin Khillji (b) Ghiyasuddin Khilji

(c) Jalaluddin Khilji (d) Bakhtiyar Khilji

39. Who wrote *Bang-e-Dara*?

(a) Dara Shikoh (b) Iqbal (c) Faiz (d) Sir Syed

40. Which city will host the 2022 commonwealth games?

(a) Vancouver (b) Birmingham (c) Melbourne (d) Colombo

41. Where is Bayt al-Maqdis situated?

(a) in Egypt (b) in Saudi Arabia (c) in Iraq (d) in Palestine

42. One of the following companions is popularly known as jamiul Qur'an (compiler of the Qur'an)

(a) Hadrat Umar (b) Hadrat Uthman (c) Hadrat Ali (d) Hadrat Abu Zar al-Ghifar

43. Which caliph is known as 'Abu Turab'

(a) Ali (b) Uthman (c) Abu Bakr (d) Umar

44. The first sultan of the Delhi Sultanate was

(a) Qutbuddin Aibak (b) Ghiyasuddin Balban

(c) Alauddin Khalji (d) Firoz Shah Tughlaq

45. The mystical work ' Majma al-Bahrayn' was written by :

(a) Aurangzeb (b) Data Ganj Baksh (c) Dara Shikoh (d) Abdul Haq Dehlawi

46. Which of the following books is written by Shah Waliullah ?

(a) Hujjatullah al-Baligha (b) Asbab-i-Baghawat-e-Hind

(c) Qawl-i-Mateen dar Abtal-i-Harkat-i-Zamin (d) Khutut-i-Alamgiri.

47. Scientific society was established at:

(a) Moradabad (b) Bijnor (c) Aligarh (d) Ghazipur.

48. The Khilafat movement was initiated by

(a) Mohammed Ali (b) Shaukat Ali

(c) Mohd. Ali Jinnah (d) Muhammed Ali and Shaukat Ali

49. Who planted the 'Tree of Liberty' at Srirangapatnam

(a) Hyder Ali (b) Tipu Sultan (c) Banda Bahadur (d) Bahadur Shah Jafar

50. Which holy book was translated as the 'Razmnama'

(a) Ramayana (b) Geeta (c) Mahabharata (d) Adi Grantha

51. A train covers half of its journey at a speed of 10 m/s and the other half at the sped of 15 m/s. The average speed of the train during the whole journey is

(a) 12.5 m/s (b) 12.0 m/s (c) 7.5 m/s (d) 5.0 m/s

52. A motor boat starting from the rest on the lake accelerates in a straight line at a constant rate 3.0 m/s^2 for 8.0 seconds. How far does the boat travel during this time?

(a) 24 m (b) 64 m (c) 96 (d) 192 m.

53. From the top of a building 40 m tall, a boy projected a stone vertically upwards with an initial velocity of 10m/s. After how long will it pass through the point where it was projected? (Take g= $10m/s^2$).

(a) 1 second (b) 2 seconds (c) 4 seconds (d) 6 seconds.

54. A force acts for 10 seconds on a body of mass 10^{-2} kg, initially at rest, after which the force ceases to act. The body traverses 0.5 m in the next 5 seconds. The magnitude of the force is :

(a) 9.8N (b) 98 N (c) 10^{-2} N (d) 10^{-4}N.

55. Two particles of masses m_1 and m_2 have equal kinetic energies. The ratio of the magnitude of their momenta is:

(a) $m_1 : m_2$ (b) $m_2 : m_1$ (c) $\sqrt{m_1} : \sqrt{m_2}$ (d) $m_1^2 : m_2^2$

56. How much momentum will a dumb-bell of mass 10 kg transfer to the floor if it falls from a height of 80 cm? (Take g = $10 m/s^2$)

(a) 10 kg m/s (b) 40 kg m/s (c) 80 kg m/s (d) 100 kg m/s

57. If R is the radius of the earth and g is acceleration due to gravity on the surface of the earth, the mean density of the earth is

(a) $\frac{3\pi R}{4gG}$ (b) $\frac{4\pi G}{3gr}$ (c) $\frac{4RG}{3\pi g}$ (d) $\frac{3g}{4\pi GR}$

58. A block of wood is kept on a table top. The mass of a wooden block is 5 kg and its dimensions are 40 cm x 20 cm x 10 cm. Find the pressure exerted by the wooden block on the table top if it is made to lie on the table top with its sides of dimensions 20cm x 10 cm. (take g= 10 m/s^2)

(a) 1000 N/m^2 (b) 1500 N/m^2 (c) 2000 N/m^2 (d) 2500N/m^2.

59. Which one of the following statements is not true?

(a) The magnitude of buoyant force does not depend on the density of the fluid.

(b) Force of gravitation due to earth is called gravity

(c) the atmospheric pressure at sea level is 10^5 Pascal.

(d) Relative density has no unit.

60. The audible range of hearing for average human beings is in the frequency range of:

(a) 5 Hz- 10 kHz (b) 20Hz- 15kHz (c) 20Hz-20kHz. (c) 1kHz-20kHz.

61. How many bulbs of resistance 6 ohms should be joined in parallel to draw a current of 2 amperes from a battery of 3 volts?

(a) 2 (b) 4 (c) 6 (d) 8

62. Two conducting wires of the same material and of equal lengths and equal diameters are first connected in series and then parallel in the circuit across the same potential difference. The ratio of heat produced in series and parallel combination would be:

(a) 1:2 (b) 2:1 (c) 1:4 (d) 4:1

63. A rectangular coil of copper wires is rotated in a magnetic field. The direction of induced current changes once in each

(a) two revolutions (b) one revolution (c) half revolution (d) one-fourth revolution.

64. The frequency of A.C mains in India is:

(a) 0 Hz (b) 50 Hz. (c) 100 Hz. (d) 200 Hz.

65. Light travels through a glass plate of thickness t and having refractive index n. If c is the velocity of light in vacuum, the time taken by light to travel this thickness of glass is

(a) t/nc (b) nt/c (c) $n^2\ t/c$ (d) t/n^2c

66. the focal length of a convex lens is 40 cm. Its power, in dioptre, is

(a) 0.4 (b) 2.5 (c) -2.5 (d) -0.4

67. A concave lens of focal length 15 cm forms an image 10 cm from the lens. How far is the object placed from the lens?

(a) 15 cm (b) 25 cm (c) 30 cm (d) 35cm

68. The formula of oxide of metal 'M' is MO. What will be the formula of its phosphate?

(a) $M_2(PO_4)$ (b) $M(PO_4)_2$ (c) MPO_4 (d) $M_3(PO_4)_2$

69. Which of the following will show "Tyndall effect"?

(a) Salt solution (b) milk (c) Copper sulphate solution (d) none of the above.

70. Colloid is a:

(a) Homogeneous mixture (b) Heterogeneous mixture

(c) Solution (d) both (a) and (b)

71. $CH_3\text{-}CH_2\text{-}OH \xrightarrow{\text{Alkalline } KMnO_4 + \text{heat}} CH_3\text{-}COOH$

In the above reaction, alkaline $KMnO_4$ act as

(a) Oxidizing agent (b) Reducing agent (c) catalyst (d) Dehydrating agent

72. Melting of wax is:

(a) Physical change (b) Chemical change

(c) Oxidation reaction (d) Reduction reaction.

73. the number of Aluminium ions present in 0.251 g of Al_2O_3 (molecular mass= 102) are

(a) 2.96×10^{21} (b) 2.96×10^{20}

(c) 1.48×10^{21} (d) 1.48×10^{20}

74. bleaching powder is prepared from the reaction of :

(a) Slaked lime and chlorine (b) Quick lime and chlorine
(c) Burnt lime and chlorine (d) Calcium and chlorine

75. During the process of extraction, sulphide ores are usually converted into

(a) Sulphates (b) Oxides (c) Hydroxides (d) Sulphites

76. A solution contains 25 g of common salt in 75 g of water. Calculate the concentration in terms of mass by mass percentage of the solution

(a) 25% (b) 50% (c) 75% (d) 0.50%

77. Which one of the following types of medicines is used for treating indigestion?

(a) Antibiotic (b) Analgesic (c) Antacid (d) Antiseptic

78. Which of the following is not a base?
(a) NaOH (b) KOH (c) NH_4OH (d) C_2H_5OH

79. $Na_2SO_4(aq) + BaCl_2(aq) \rightarrow BaSO_4(s) + 2NaCl(aq)$.
The above reaction is a :

(a) Decomposition reaction (b) Redox reaction

(c) Displacement reaction (d) Precipitation reaction.

80. Which is not a homogeneous mixture?

(a) Brass (b) Bronze (c) Steel (d) 24 carat gold

81. A metal 'M' forms an oxide with the formula MO. If metal 'M' belongs to the third period of modern periodic table, what is the atomic number of metal 'M'?

(a) 11 (b) 12 (c) 20 (d) 13

82. Which is an example of decomposition reaction ?

(a) $NH_4CNO \rightarrow NH_2CONH_2$ (b) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

(c) $2H_2O \rightarrow 2H_2 + O_2$ (d) $CaO + H_2O \rightarrow Ca(OH)_2$

83. $CH_3CH_2OH \xrightarrow{\text{Alkaline KMnO4 or acidified K2Cr2O7 + heat}}$ .....

The product is

(a) Acetaldehyde (b) Acetic acid (c)Ethanol (d) Potassium ethoxide

84. Which one is the correct example of metalloid?

(a) Caesium (b) Aluminium (c) Gallium (d) Tellurium

85. Gustatory receptor is responsible for detecting the

(a) Taste (b) Smell (c) Pressure (d) Temperature

86. The basic filtration unit of kidney is

(a) ureter (b) Neurons (c) Nephrons (d) Bownan's capsule

87. If a yellow seeded variety of pea is crossed with a green seeded variety, then in F_1 all the seeds will be

(a) Green (b) Greenish yellow (c) Yellow (d) Yellowish green

88. Two special cells in a stomata, surrounding the tiny pore are called

(a) Subsidiary cells (b) guard cell (c) Epidermal cell (d) Epiblemal cells

89. The plant hormone which promotes the cell division is

(a) Gibberellin (b) Auxin (c) Cyrtokinin (d) Abscisic acid

90. In an ecosystem the producers are:

(a) All green plants, algae and fungi.

(b) All green plants and certain blue green algae.

(c) All micro-organisms and decomposers

(d) Grasses only

91. Ozone at the higher level of the atmosphere is a product of:

(a) Infrared radiations (b) UV radiations

(c) Atomic radiations (d) Infrared as well as atomic radiations

92. Placenta is responsible for:

(a) Transport of O_2 (b) Removal of waste materials

(c) Transport of glucose (d) All of the above

93. Pseudocoelome is present in:

(a) Nematodes (b) Annelids (c) Coelenterate (d) Echinoderms

94. The materials such as starch, oils and protein granules are stored in which of the cell organelle?

(a) Mitochondria (b) Lysosomes (c) Leucoplasts (d) Chromoplasts

95. Branched and uninucleate muscle cells is the characteristics of

(a) Heart muscle (b) Smooth muscle (c) Skeletal muscle (d) Both (a) and (b)

96. The tissue which makes the plant hard and stiff is :

(a) Sclerenchyma (b) Parenchyma (c) Collenchyma (d) Aerenchyma

97. Sleeping sickness is caused by:

(a) Leishmania sp. (b) Aedes sp. (c) Trypanosoma sp. (d) Ascaris sp.

98. Two chambered heart is the characteristic of

(a) Fishes (b) Amphibian (c) Reptiles (d) Mammals

99. In human beings sex is determined by

(a) X chromosome (b) Y chromosome

(c) Both X and Y chromosome (d) A and B chromosome

100. Naked seeds are the characteristic feature of

(a) Gymnosperms (b) Bryophytes

(c) Thallophytes (d) Pteridophytes

Answer Key 2018

1.b	2.a	3.a	4.c	5.d	6.c	7.c	8.a	9.b	10.d	11.b	12.c
13.c	14.b	15.*	16.a	17.a	18.c	19.d	20.d	21.c	22.d	23.a	24.c
25.c	26.b	27.d	28.*	29.a	30.d	31.d	32.b	33.c	34.b	35.b	36.b
37.c	38.c	39.b	40.b	41.d	42.b	43.a	44.a	45.c	46.a	47.d	48.d
49.b	50.c	51.b	52.c	53.b	54.d	55.c	56.b	57.d	58.d	59.a	60.c
61.b	62.c	63.c	64.b	65.b	66.b	67.c	68.d	69.b	70.b	71.a	72.a
73.a	74.a	75.b	76.a	77.c	78.d	79.d	80.d	81.b	82.c	83.b	84.d
85.a	86.c	87.c	88.b	89.c	90.b	91.b	92.d	93.a	94.c	95.a	96.a
97.c	98.a	99.c	100.a								

1. A ball is thrown vertically upwards with the velocity 20 m/s from the top of a multi-storey building. The height of the point from where the ball is thrown is 25m from the ground. How high will the ball rise from the ground? ($g=10m/s^2$)

(a) 20m (b) 35m (c) 45m (d) 50m

2. An athlete completes one round of a circular track of diameter 200m in 40 seconds. What will be the distance covered at the end of 2 minutes 20 seconds.

(a) 2200m (b) 1200m (c) 700m (d) 200m

3. A vehicle starting from rest attains a speed of 77 km/h after covering a distance of 100 m. if the mass of the vehicle is 500 kg, the force exerted by the engine is

(a) 20N (b) 100N (c) 500N (d) 1000N

4. A ball of mass 0.1 kg strikes a wall normally with a speed of 30 m/s and rebounds with a speed of 20 m/s. the magnitude of change in momentum of the ball is

(a) 1 kg m/s (b) 2 kg m/s (c) 3 kg m/s (d) 5 kg m/s

5. The gravitational force of attraction between a stone weighing 2 kg and the earth weighing 6×10^{24} kg is 19.6 Newtons. What will be the acceleration produced in the earth?

(a) $9.8\ m/s^2$ (b) $19.6\ m/s^2$ (c) $2.2 \times 10^{-24}\ m/s^2$ (d) $3.3 \times 10^{-24}\ m/s^2$

6. Two objects A and B are immersed in water. The masses of the objects are 200 kg and 100 kg respectively and relative densities are ρ_A and ρ_B. if volumes of both the objects are $2m^3$, then the ratio of relative densities of B, ρ_B and A, ρ_A are

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{2}{3}$

7. What is the work to be done to increase the velocity of a car from 36 km/h to 72 km/h, if the mass of the car is 1500 kg?

(a) 74×10^3 J (b) 150×10^3 J (c) 225×10^3 J (d) 300×10^3 J

8. A certain household has consumed 250 units of energy during a month. How many energy is this in joules?

(a) 9×10^6 J (b) 9×10^8 J (c) 27×10^8 J (d) 27×10^9 J

9. The motor of a pump lifts 30 kg of water per minute to a height of 6 m. the power of motor is ($g=10\ m/s^2$)

(a) 180 W (b) 120 W (c) 30 W (d) 90 W

10. A man stands in between two walls and bursts a balloon. He hears two successive echoes after 0.5 seconds and 2.5 seconds. The distance between the walls when the speed of sound is 332 m/s, is

(a) 415 m (b) 498 m (c) 518 m (d) 598 m

11. How many 176 Ω resistors (in parallel) are required to carry a 5 A on a 220 V line?

(a) 2 (b) 4 (c) 6 (d) 8

12. A man uses a 100 W bulb 8 hours a day and an electric heater of 300 W for 4 hours a day. The total cost for the month of November at the rate of rupees 4 per unit will be

(a) Rs.160 (b) Rs.240 (c) Rs.320 (d) Rs.600

13. Which one the following statements is not true?

(a) An electric motor converts mechanical energy into electrical energy.

(b) An electric generator works on the principle of electromagnetic induction.

(c) The field at the centre of a long circular coil carrying current will be parallel straight lines.

(d) A wire with a red insulation is usually the live wire of the electric supply.

14. Which one of the following is not a source of biomass energy?

(a) Wood (b) Gobar gas (c) Nuclear energy (d) Coal

15. An object is placed at the centre of curvature of a convex mirror. The distance between its image and the pole is

(a) Less than f (b) between f and $2f$ (c) equal to $2f$ (d) greater than $2f$

16. A person needs a lens of power -5.0 dioptres for correcting his distant vision. What is the focal length of the lens required for correcting distant vision?

(a) -0.20 m (b) +0.20 m (c) -0.02 m (d) +0.02 m

17. The refractive index of glass is $\frac{3}{2}$ and water has refractive index $\frac{4}{3}$. If the speed of light in glass is 2×10^8 m/s, the speed of light in water in m/s is

(a) 1.50×10^8 (b) 1.78×10^8 (c) 2.25×10^8 (d) 2.67×10^8

18. The presence of the double layer in colloids accounts for

(a) optical properties (b) kinetic properties

(c) electrical properties (d) stability of colloids

19. The internal energy of a molecule is its

(a) translational energy (b) rotational energy

(c) vibrational energy (d) all of these

20. Which is not true about the solid state?

(a) They have definite shape and volume.

(b) They have high attractive forces among molecules.

(c) They have high vapour pressure.

(d) They have high density and low compressibility.

21. Hydrochloric acid is sold commercially as 12.0 M solution. How many moles of HCl are in 300.0 mL of 12.0 M solution?

(a) 4 (b) 36 (c) 3.6 (d) 12.3

22. Copper metal has two naturally occurring isotopes: copper – 63 (69.17%; isotopic mass = 62.94 amu) and copper – 65 (30.83%; isotopic mass = 64.93 amu). What is the atomic mass of copper?

(a) 62.94 amu (b) 64.93 amu (c) 63.93 amu (d) 63.55 amu

23. The correct order of atomic radius is

(a) S=F=0 (b) F>0>S (c) F<0<S (d) F=0<S

24. An element has two isotopes X^{35} and X^{37} found in ratio of 3:1 in nature. The average mass of the element is

(a) 35 (b) 40 (c) 35.5 (d) 36

25. The compound showing addition reaction

(a) C_4H_{10} (b) CH_4 (c) C_2H_2 (d) C_3H_8

26. Compound showing maximum melting point is

(a) NaCl (b) CaO (c) $MgCl_2$ (d)LiCl

27. Correct order of electrical conductivity

(a) Al > Cu > Ag > Au (b) Ag > Cu > Al > Au

(c) Ag > Cu > Au > Al (d) Au > Cu > Al > Ag

28. Tomato contains

(a) Citric acid (b) Acetic acid (c) Lactic acid (d) Oxalic acid

29. Al_2O_3 reacts with NaOH producing

(a) $Al(OH)_3$ (b) H_2 (c) $NaAlO_2$ (d) Na_2AlO_2

30. The substance which can produce CO_2 gas with baking soda solution is

(a) ethanol (b) vegetable oil (c) vinegar (d) soap solution

31. Which is most acidic?

(a) Gastric juice (b) Lemon juice (c) Pure water (d) Blood

32. Which is an olfactory indicator?

(a) Methyl orange (b) Phenolphthalein

(c) Vanilla extract (d) Red cabbage extract

33. What is 'X'?

$CH_3CH_2OH \rightarrow X$ (in presence of conc. H_2SO_4, and 443K temperature)

(a) CH_3CH_3 (b) $CH_2=CH_2$ (c) $CH \equiv CH$ (d) CH_3COOH

34. The molecular formula of unsaturated cyclic hydrocarbon is

(a) C_6H_{14} (b) C_6H_{12} (c) C_6H_6 (d) C_5H_{10}

35. Oxygenated blood from lungs goes directly to the

(a) Right atrium (b) Right ventricle (c) Left atrium (d) Left ventricle

36. The absorption of water due to expenditure of energy is called

(a) Active absorption (b) Passive absorption

(c) Osmotic absorption (d) All of the above

37. The growth inhibiting hormone in plants is

(a) Auxin (b) Cytokinin (c) Abscisic acid (d) Gibberellins

38. Cholera is spread by

(a) Breathing in infected air (b) Drinking of contaminated water

(c) Handshaking (d) Blood to blood contact

39. Cold blooded animals are

(a) Which have cold blood (b) Who can regulate their body temperature

(c) Who feel cold a lot (d) Who cannot regulate their body temperature

40. The evolved oxygen during photosynthesis comes from the breakdown of

(a) Glucose (b) CO_2 (c) Water (d) Chlorophyll

41. The structure produced along the leaf margin of *Bryophyllum* and after falling on soil develops into a new plant is

(a) Seed (b) Spore (c) Bud (d) Fruit

42. In 1987, the united nations environment program (UNEP) succeeded in forging an agreement to freeze CFC production at

(a) 1980 level (b) 1983 level (c) 1986 level (d) 1987 level

43. Water harvesting is an age old practice in India, as in Rajasthan it was through

(a) Ahars (b) Kulhs (c) Bundhis (d) Khadins

44. Blood pressure and salivation are controlled by

(a) Cerebrum (b) Cerebellum (c) Hypothalamus (d) Medulla

45. Cells arise from preexisting cells was proposed by

(a) Robert Hauk (b) Robert Brown (c) Purkinje (d) Virchow

46. The phenotypic ratio in Mendelian dihybrid cross is

(a) 9:3:1:3 (b) 9:2:2:2:1 (c) 9:3:3:1 (d) 3:1

47. Which of the following is the correct sequence of classification?

(a) Phylum, class, order, family (b) Phylum, order, class, genus

(c) Phylum, class, family, order (d) Phylum, family, class, order

48. In plants water is conducted through

(a) Vessel elements (b) Companion cells (c) Sieve cells (d) Sclereids

49. Which of the following is the function of Testes?

(a) Secretion of Testosterone (b) Formation of sperm

(c) Secretion of Estrogen (d) Both (a) and (b)

50. Flame cells are excretory organ of

(a) Annelida (b) Echinodermata (c) Coelenterates (d) Platyhelminthes

51. It is dark. You have 10 grey socks and 10 blue socks you want to put into pairs. All socks are exactly same except for their colour. How many minimum sock would you need to take with you to ensure you had at least a pair?

(a) 16 (b) 8 (c) 7 (d) 3

52. A number when divided by 121 leaved 37 as remainder. What will be the remainder when the same number is divided by 11?

(a) 3 (b) 2 (c) 4 (d) 1

53. Decimal representation of a rational number cannot be

(a) terminating (c) non-terminating

(c) non-terminating repeating (d) non-terminating non - repeating

54. Solving for x

$x = \frac{1}{2-\frac{1}{2-\frac{1}{2-x}}}$, $x \neq 2$

(a) 0 (b) -1 (c) 1 (d) ±1

55. If $A^x = B^y = C^z$ and $A^2 = BC$ then z equals

(a) $\frac{xy}{2y-x}$ (b) $\frac{2xy}{y-x}$ (c) $\frac{xy}{2(y-x)}$ (d) $\frac{xy}{2(x-y)}$

56. Waheeda's granddaughter is about as many days as her son in weeks, and her daughter is as many months as she is in years. Her granddaughter, her son and Waheeda together are 120 years old. The age of Waheeda in years is

(a) 60 (b) 66 (c) 72 (d) 81

57. If $2x+y \leq 6$, $x<0$, then

(a) $y>6$ (b) $y \geq 6$ (c) $0 \leq y \leq 6$ (d) $y \leq 0$

58. A taxi driver charges Rs.10.50 per km flat rate in addition to Rs.20. Ajoy has no more than 220 to spend on the ride. Without exceeding his budget, Ajoy can travel

(a) less than 20 km (b) less than or equal to 20 km

(c) exactly 20 km (d) greater than 20 km

59. The condition which must be satisfied by the coefficients of the polynomial $f(x) = x^3 - px^2+qx-r$, when the sum of its two zeros is zero is

(a) $pqr=1$ (b) $qr=p$ (c) $pr=q$ (d) $pq=r$

60. If one of the zeros of the polynomial $(a^2+9)x^2+13x+6a$ is reciprocal of the other, then the value of a is

(a) 2 (b) 3 (c) 4 (d) 5

61. If p^{th} term of an A.P. is q and q^{th} term p, then its n^{th} term is

(a) $p+n-q$ (b) $p+q-n$ (c) $q+n-p$ (d) $p-q-n$

62. The points (3a, 0), (0, 3(b) and (a, 2(b)

(a) lie on a straight line (b) forms a triangle

(c) forms an equilateral triangle (d) forms a right angled triangle

63. If the co – ordinate of two points A and B are (3, 4) and (5, -2) respectively. Find the coordinates of any point P, if PA = PB and area of $\Delta PAB = 10$

(a) (7, 2) (b) (1, -3) (c) (4, 5) (d) (1, 2)

64. ΔABC is a right angled triangle, in which angle C = 90° and CD $\perp$ AB. If BC = a, CA = b, AB = c and CD = p, then $1/a^2 + 1/b^2 =$

(a) b^2/p^2 (b) $1/p^2$ (c) a^2/p^2 (d) $1/c^2$

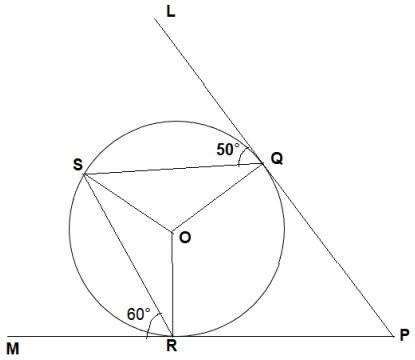
65. The number of possible isosceles triangles (excluding the case of equilateral triangles) with integer lengths of its sides such that the sum of any two sides is 10, are

(a) infinite (b) 16 (c) 13 (d) 8

66. Two adjacent sides of a parallelogram are 30 m and 4 m and the diagonal joining the end points of these sides is 40 m. The area of the parallelogram is

(a) 168 m^2 (b) 336 m^2 (c) 372 m^2 (d) 480 m^2

67. In the given figure, O is the centre of a circle: PQL and PRM are the tangents at the points Q and R respectively and S is a point on the circle such than angle SQL = 50° and angle SRM = 60°. Then angle QSR = ?

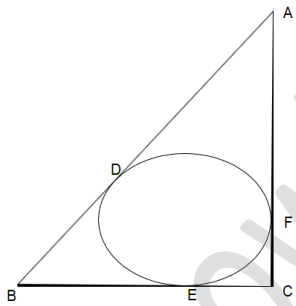


(a) 40° (b) 50° (c) 60° (d) 70°

68. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that OQ = 12 cm. Length of PQ is

(a) $\sqrt{119}$ cm (b) 13 cm (c) 12 cm (d) 8.5 cm

69. In the given figure, a circle inscribed in a triangle ABC, touches the sides AB, BC, and CA at point D, E and F respectively. If AB = 14 cm, BC = 8 cm and CA = 12 cm. the lengths of AD, BE and CF respectively are



(a) 9, 3, 5 (b) 5, 3, 9 (c) 9, 5, 3 (d) 5, 9, 3

70. The areas of two similar triangles are 25 cm^2 and 36 cm^2. If the median of the smaller triangle is 10 cm, then the median of the larger triangle is

(a) 12 cm (b) 15 cm (c) 10 cm (d) 18 cm

71. If four times the sum of the areas of two circular faces of a cylinder of heights 8 cm is equal to twice the curve surface area, then diameter of the cylinder is

(a) 4 cm (b) 8 cm (c) 2 cm (d) 6 cm

72. A vessel is in the form of a hollow hemisphere by a hollow cylinder. The diameter of the hemisphere is 14 cm and total height of the vessel is 13 cm. Find the inner surface area of the vessel.

(a) 572 cm^2 (b) 562 cm^2 (c) 625 cm^2 (d) 526 cm^2

73. A cone, a hemisphere and a cylinder have equal bases and have the same height. The ratio of their volumes is

(a) 1:2:3 (b) 2:1:3 (c) 2:3:1 (d) 3:2:1

74. If 90° < Θ < 180°, and sin Θ = $\frac{3}{5}$, then tan Θ is equal to

(a) $\frac{-3}{4}$ (b) $\frac{3}{4}$ (c) $\frac{3}{2}$ (d) $\frac{2}{\sqrt{3}}$

75. If sec Θ + tan Θ = m, then the value of m^2 - $\frac{1}{m2}$ +1 is

(a) cos Θ (b) sin Θ (c) tan Θ (d) cot Θ

76. The angles of depression of the top and the bottom of a single storeyed building from the top of a multi storeyed building are 30° and 45° respectively. If the height of the multi-storeyed building is $12+4\sqrt{3}$ m, the height of the single storeyed building is

(a) $4\sqrt{3}+1$ m (b) $8\sqrt{3}-9$ m (c) 8 m (d) 4 m

77. If the mean of *n* observations af_1, af_2, af_3,.....af_n *is* aF then

(a) aF = $af_1+af_2+af_3+.....+af_n$

(b) $a(f_1+F)+a(f_2+F)+.....+a(f_n+F)=0$

(c) $(af_1-aF)+(af_2-aF)+……+(af_n-aF)=0$

(d) $\sum_{i=1}^{n}(af_i - aF)=a$

78. A two digit number is written at random (digit at 10s place is non – zero). The probability that the number will be even but smaller than 40 is

(a) $\frac{8}{45}$ (b) $\frac{4}{9}$ (c) $\frac{1}{5}$ (d) $\frac{1}{6}$

79. In a class in which all students practice at least one sport, 60% of students play soccer or basketball and 10% practice both sports. If there are also 60% students that do not play soccer, the probability that a student chosen at random from the class, play soccer only, is

(a) 0.3 (b) 0.4 (c) 0.5 (d) 0.6

80. Which one of the following is least if mean value of x, X=14.

(a) $\Sigma(X-12)^2$ (b) $\Sigma(X-10)^2$ (c) $\Sigma(X-15)^2$ (d) $\Sigma(X-14)^2$

81. The famous Mehrangarh fort is situated at which place?

(a) Jaisalmer (b) Jaipur (c) Jodhpur (d) Ajmer

82. Dr. Linus Carl Pauling is the only person to have won two Nobel prizes individually for

(a) Chemistry in 1954, Peace prize in 1962

(b) Peace prize in 1954, Chemistry in 1962

(c) Physics in 1954, Medicine in 1962

(d) Medicine in 1954, Physics in 1962

83. The receptor of sweet taste is located at which part of human tongue?

(a) Base of tongue (b) Tip of tongue

(c) Posterior median part of tongue (d) The edges of tongue

84. Which of the following is not correctly matched?

(CAPITALS)		(COUNTRIES)
(a) Darfur	-	South Sudan
(b) Dili	-	East Timor
(c) Dakar	-	Senegal
(d) Brussels	-	Denmark

85. In 1972, the world's first nationwide green party was founded in

(a) Norway (b) Netherlands (c) Denmark (d) Australia

86. India's first insect museum has been opened in which state?

(a) Kerala (b) Assam (c) Tamil Nadu (d) Odisha

87. Way of removing pollutants or toxic waste from environment with the help of living organisms is called?

(a) degradation (b) bioremediation

(c) integrated disease management (d) disease control

88. The Red Cross, a worldwide humanitarian aid provider, has its head office in

(a) UK (b) USA (c) Russia (d) Switzerland

89. The theory of 'economic drain of India' during British rule was propounded by?

(a) Jawaharlal Nehru (b) R.C. Dutt (c) M.K. Gandhi (d) Dadabhai Naoroji

90. Token currency in India was introduced by

(a) Qutbuddin Aibek (b) Iltutmish

(c) Ghiyasuddin Tughluq (d) Muhammad bin Tughluq

91. The battle of ' Ghazwa Ahzab' took place in

(a) 4 AH (b) 5 AH (c) 6 AH (d) 7 AH

92. Islam ordains faith in

(a) Prophet Muhammad only

(b) Prophets Muhammad, Ibrahim and Musa only

(c) Prophet Muhammad and all the Judeo-Christian Messengers of god only

(d) All the Messengers of God

93. The first school was founded by Sir Syed Ahmad Khan in

(a) Ghazipur (b) Aligarh (c) Muradabad (d) Delhi

94. Prophet Yahya was the son of

(a) Zakriya (b) Yunus (c) Isma'il (d) Ilyas

95. In Islamic history, the 'most authentic book after the quran' is known as

(a) Sahih Muslim (b) Jami' Tirmidhi (c) Sahih Bukhari (d) Sunan abu Dawud

96. The first Battle of Panipat was fought between the forces of Babur and Ibrahim Lodhi in the year

(a) 1515 (b) 1520 (c) 1526 (d) 1556

97. Which Mughal Emperor shifted his capital from Agra to Delhi?

(a) Akbar (b) Aurangzeb (c) Shahjahan (d) Bahadur Shah

98. Muslims of Malabar are called

(a) Mopillah (b) Arabs (c) Traders (d) Migrants

99. To combat the British, Tipu Sultan sought the help of

(a) Dutch (b) French (c) Portuguese (d) Russians

100. Aurangzeb was the disciple of which sufi saint?

(a) Mujaddid Alf Thani (b) Khwaja Muhammad Masoom

(c) Shah Waliullah (d) Baba Farid Ganj Shakar

Answer Key 2019

1.c	2.a	3.d	4.d	5.d	6.a	7.c	8.b	9.c	10.b	11.b	12.b
13.a	14.c	15.a	16.a	17.c	18.d	19.d	20.c	21.c	22.d	23.c	24.c
25.c	26.b	27.c	28.d	29.c	30.c	31.a	32.c	33.b	34.c	35.c	36.a
37.c	38.b	39.d	40.c	41.c	42.c	43.d	44.d	45.d	46.c	47.a	48.a
49.d	50.d	51.d	52.c	53.d	54.c	55.a	56.c	57.a	58.a	59.d	60.b
61.b	62.a	63.a	64.b	65.c	66.b	67.d	68.a	69.c	70.a	71.b	72.a
73.a	74.a	75.b	76.c	77.c	78.d	79.a	80.d	81.c	82.a	83.b	84.d
85.d	86.c	87.b	88.d	89.d	90.d	91.b	92.d	93.a	94.a	95.c	96.c
97.c	98.a	99.b	100.b								

1. A man spends 1/3 of his income on food, 2/5 of his income on house rent and 1/5 of his income on clothes. If he still has ₹400 left with him, his income is

(a) Rs.4000 (b) Rs.5000 (c) Rs.6000 (d) Rs.7000

2. If (x + 2) and (x - 1) are factors of ($x^3 + 10x^2 + mx + n$), then

(a) m = 3, n = -3 (b) m=17, n = -8 (C) m = 23, n = -19 (d) m = 7, n = -18

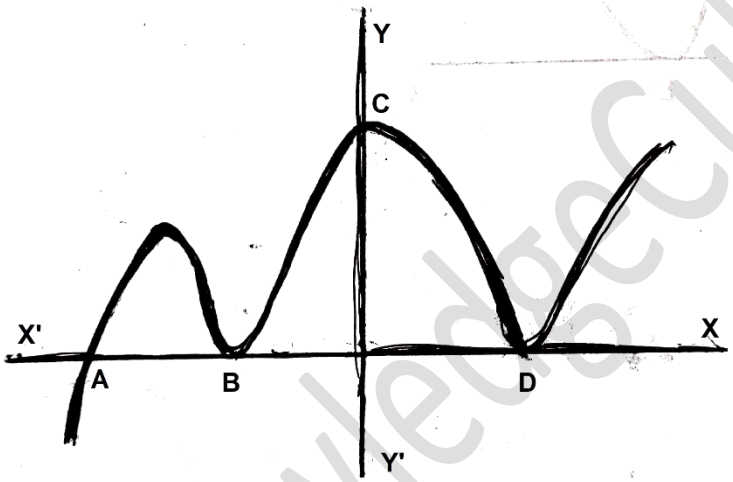
3. If x= a + 1/a and y = a - 1/a, then the value of $x^4 + y^4 - 2x^2y^2$ is

(a) 24 (b) 18 (c) 16 (d) 12

4. If b is a real numbers such that $b^2 = b + 1$. Then which of the following is not true?

(a) $b^3 = b^2 + b$ (b) $b^4 = b^3+b+1$ (c) $)b^3 = 2b+1$ (d) $b^3+b^2 = b+1$

5. Figure show a graph for y = f(x). The number of zeros of f(x) are :



(a) 2 (b) 3 (c) 4 (d) infinite

6. If $\sqrt{(5/3)}$ and $-\sqrt{(5/3)}$ are two zeros of the polynomial $3x^4 + 6x^3 - 2x^2 - 10x - 5$ then other two zeros are :

(a) -1,-1 (b) 1,-1 (c) 1,1 (d) 3,-3

7. If $x = 3 - 2\sqrt{2}$, then $(\sqrt{x} - \frac{1}{\sqrt{x}}) =$

(a)1 (b) 2 (c) 4 (d) 6

8. The value of

$(\frac{81}{16})^{-3/4} \times \{(\frac{25}{9})^{-3/2} \div (\frac{5}{2})^{-3}\}$ is :

(a) $\frac{64}{15625}$ (b) $\frac{729}{64}$ (c) 1 (d) 3

9. If $4x^2 + 9y^2 + z^2 = 6xy + 3yz + 2xz$ then $8x^3 + 27y^3 + z^3$ will be equal to

(a) 0 (b) $2x + 3y + z - 18xyz$ (c) $18xyz$ (d) $(2x + 3y + z)^3$

10. The equation $x^2 + 3x + k = 0$, has real root. Then

a) $k \geq 9/4$ b) $k \leq 9/4$ c) $k \geq 0$ d) $k \leq 0$

11. How many natural numbers between 300 to 500 are multiples of 7 ?

(a) 29 (b) 28 (c) 27 (d) 30

12. For what value of k does the pair of equation $5x + 2y = 2k$ and $2 (k + 1) x + ky = (3k + 4)$ have an infinite number of solutions?

(a) $k = 5$ (b) $k = 4$ (c) $k = 2/3$ (d) $k = - 2/3$

13. Which term of the AP 24,21,18,15..... is the first negative term?

(a) $n = 9$ (b) $n = 10$ (c) $n = 11$ (d) $n = 8$

14. The elimination of θ from $x \cos\theta - y \sin\theta = 2$ and $x \sin\theta + y \cos\theta = 4$ will give

(a) $x^2+y^2 = 20$ (b) $3x^2+y^2= 20$ (c) $x^2-y^2=20$ (d) $3x^2-y^2= 10$

15. For given α,β (both $<\pi/2$)and if $\cos(\alpha+\beta)=0$, then $\sin(\alpha - \beta) =$?

(a) cos β (b) cos 2β (c) sin α (d) sin 2α

16. The angle of elevation of the top of a tower from the point P and Q at a distance of 'a' and 'b' respectively from the base of the tower and in the same straight line with it are complimentary. The height of the tower is:

(a) $\sqrt{ab}$ (b) a/b (c) ab (d) a^2b^2

17. If the arms of one angle are respectively parallel to the arms of another angle, then the two angles are

(a) neither equal nor supplementary (b) not equal but supplementary

(c) equal but not supplementary (d) either equal or supplementary

18. Consider the following statements:

(I) The sum of the squares of the sides of a rhombus is equal to the sum of the squares of its diagonals.

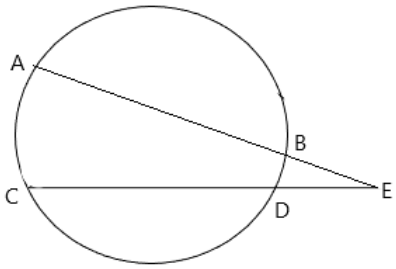
(II) The quadrilateral formed by joining the mid-points of the pairs of adjacent sides of a rhombus is a rectangle.

(III) Both diagonals of a rhombus divide it into four triangles, which are similar ones.

Which of these is/are correct?

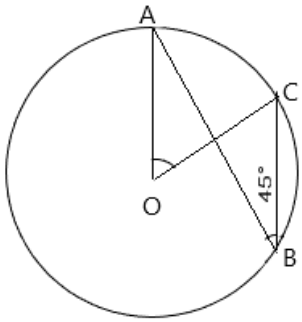
(a) (I) only (b) (I), (II) and (III) (c) (I) and (II) only (d) (II) and (III) only

19. Two chords AB and CD of a circle intersect each other at a point E outside the circle. If AB = 11cm, BE =3 cm and DE = 3.5 cm, then CD =?



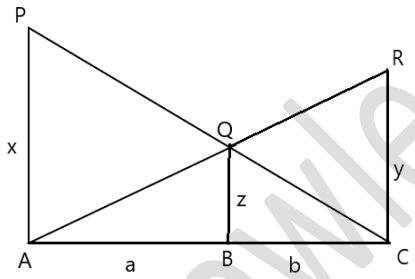
(a) 10.5 cm (b) 9.5 cm (c) 8.5 cm (d) 7.5 cm

20. In the adjacent figure, O is the centre of the circle. If ∠ABC = 45° then ∠AOC is



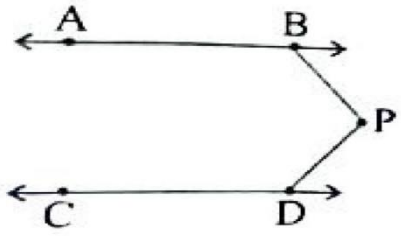
(a) 30° (b) 45° (c) 60° (d) 90°

21. In the given figure PA, QB and RC are perpendicular to AC such that PA =x, RC =y, QB =z, AB = a and BC = b. Then the value of 1/x + 1/y - 1/z is



(a) -1 (b) 1 (c) 0 (d) 2

22. In the figure AB || CD and P is any point. Then ∠ABP + ∠BPD + ∠CDP is equal to



(a) 90° (b) 27° (c)180° (d)360°

23. The points lying on the curve $\frac{2}{x}+\frac{1}{y}=7$ are not in

(a) I quadrant (b) II quadrant (c) lll quadrant (d) IV quadrant

24. The area of the square ABCD with A(-2, 3) and B (5, -1) is

(a) 13 (b) 25 (C) 53 (d) 65

25. The area of the ∆OPQ with O(0,0), P(1, 0), Q(0,1) is

(a) 1 sq unit (b) 1/2 sq unit (c) 1/4 sq unit (d) 2 sq unit

26. The water of the tank, measuring 20 m x 15 m x 6 m, lasts for 3 days in a village. The population of the village that requires 150 litres of water per head per day, served by the tank, is

(a) 4000 (b) 8000 (c) 12000 (d) 40000

27. There are 50 numbers. Each number is subtracted from 53 and the new mean of the numbers so obtained is found to be -3.5. The mean of the given numbers is

(a) 46.5 (b) 49.5 (c) 53.5 (d) 56.5

28. An urn contains 25 balls numbered 1 through 25. Two balls are drawn from the urn with replacement. Find the probability of selecting both odd numbers.

(a)13/25 (b)26/50 (c)169/625 (d)13/50

29. Let $\bar{x}$ be the mean of $x_1, x_2, \ldots\ldots\ldots, x_n$ and $\bar{y}$ be the mean of $y_1, y_2, \ldots\ldots\ldots, y_n$. If $\bar{z}$ is the mean of $x_1, x_2, \ldots\ldots\ldots, x_n, y_1, y_2, \ldots\ldots\ldots, y_n$, then $\bar{z}$ = ?

(a) $\bar{x} + \bar{y}$ (b) $(\bar{x} + \bar{y})/2$ (c) $(\bar{x} + \bar{y})/n$ (d) $(\bar{x} + \bar{y})/2n$

30. Find x and y in the following table, if median is 32.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	Total
No of Students	10	x	25	30	y	10	100

(a) x = 9, y = 16 (b) x = 16, y = 9 (c) x = 15, y = 10 (d) x= 10, y = 15

31. Imperial Bank of India is the old name of

(a) ICICI Bank (b) Allahabad Bank (c) State Bank of India (d) Bharat Overseas Bank

32. Which game, believed to have originated in Tamil Nadu, is the National game of Bangladesh?

(a) Kabaddi (b) Polo (c) Hockey (d) Volleyball

33. Of the 12 constellations incorporated into the traditional zodiac signs, which is the only non-living thing?

(a) Capricorn (b) Aquarius (c) Virgo (d) Libra

34. Who among the following cannot participate in the elections of President of India?

(a) Elected members of Lok Sabha

(b) Elected members of Rajya Sabha

(c) Elected members of Legislative Assemblies of States

(d) Anglo-Indian members of Lok Sabha and State Assemblies

35. Chola Empire in ancient India was famous for:

(a) Urban Administration (b) Police Administration

(c) Village Administration (d) Military Administration

36. Ibn Batuta is a _____ century traveller and historian.

(a) 12th (b) 13th (c) 14th (d) I5th

37. "Servants of India Society" provided famine relief and worked for tribal. it was formed by:

(a) Bal Gangadhar Tilak (b) Gopal Krishna Gokhale

(c) Lala Lajpat Rai (d) Vivekanand

38. V. Shantaram Lifetime Achievement Award, 2018, has been given to:

(a) Shyam Benegal (b) Amitabh Bachchan (c) Dilip Kumar (d) Anupam Kher

39. Shaikh Nizamuddin Auliya belonged to the:

(a) Suhrawardi Silsila (b) Auliya Silsila (c) Chishti Silsila (d) Naqshbandi Silsila

40. Chameli Devi Award is given in the field of:

(a) Science (b) Journalism (c) Music (d) Literature

41. The first verses revealed to Prophet Muhammad are incorporated in the Surah

(a) Al-Balad (b) Al-Ma'idah (c) Al-'Alaq (d) Al-Falaq

42. The third pillar of lslam is

(a) Prayers (b) Zakat (c) Hajj (d) Fasting during the month of Ramadan

43. In the courtyard of a medieval mosque stands a famous iron pillar which bears a Sanskrit inscription in Gupta script. The name of the mosque is

(a) Jama Masjid Delhi (b) Quwwat-ul-Islam Mosque

(C) Begampuri Mosque (d) Khirki Masjid

44. From the chronological point of view which of the following is the first major compilation of Hadith ?

(a) Sahih Bukhari (b) Muwatta Imam Malik (c) Sahih Muslim (d) Sunan Abu Dawud

45. The Prime Minister of the Provisional Indian Government in exile was

(a) Maulana Barakatullah Bhopali (b) Maulana Ubaidullah Sindhi

(c) Rahmat Ali Zakariya (d) Bashir Ahmad

46. Hujjatullah-al-Baligha is written by:

(a) Sheikh Ahmad Sirhindi (b) Shah Waliullah

(c) Maulana Shibli (d) Maulana Abul Kalam Azad

47. The freedom fighter associated with the Kakori Conspiracy was

(a) Ashfaqullah Khan (b) Maulana Abul Kalam Azad

(c) Badruddin Tayyabji (d) Veer Abdul Hamid

48. The Surah that contains two Bismillahs is

(a) Naml (b) Baqarah (c) Maida (d) Alaq

49. In which Anglo-Mysore war did Tipu Sultan participate after the death of his father Hyder Ali?

(a) First (b) Second (c) Third (d) Fourth

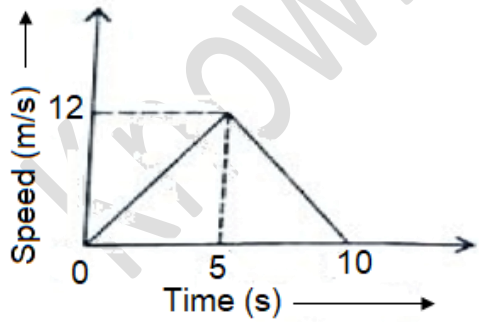
50. Which city was named 'Daulatabad' by the Tughlaq Sultan?

(a) Devsthali (b) Devagiri (c) Deoli (d) Dharampur

51. A boy on a 20 m high building drops a stone. One second later he throws down another stone. Both the stones hit the ground Simultaneously. The initial velocity of the second stone is (g= 10 m/s^2)

(a) 0 (b) 10 m/s (c) 15 m/s (d) 25 m/s

52. The speed-time graph of a car moving along a fixed direction is shown in figure below. Obtain the distance traversed by the car between t =0 second to t = 10 seconds.



(a) 0 (b) 30 m (c) 60 m (d) 120 m

53. A girl of mass 40 kg jumps with a horizontal velocity of 5 m/s onto a stationary cart with frictionless wheels. The mass of the cart is 10 kg. What is her velocity as the cart starts moving? Assume that there is no external unbalanced force working in the horizontal direction.

(a) 5 m/s (b) 4 m/s (c) 3 m/s (d) 1m/s

54. A motor-car of mass 1200 kg is moving along a straight line with a uniform velocity of 90 km/h. Its velocity is slowed down to 18 km/h in 4 seconds by an unbalanced external force. The magnitude of the force is

(a) 1080 N (b) 2160 N (c) 2400 N (d) 6000 N

55. A certain force applied to mass m_1 gives it an acceleration of 10 m/s². The same force applied to mass m_2 gives it an acceleration of 15 m/s². If the two masses are joined together and the same force is applied to the combination, the acceleration will be

(a) 3 m/s² (b) 6 m/s² (c) 9 m/s² (d) 12 m/s²

56. A cylindrical block of radius r and mass m is lying on the table and the pressure acting on the table is P. If its radius is doubled and mass Is tripled, then the pressure acting on the table is :

(a) 2P (b) ¾ P (c) 2/3 P (d) ½ P

57. The density of ice is x gram/cm³ and that of water is y gram/cm³. What is the change in volume when m gram of ice melts?

(a) m (y-x) cm³ (b) (y-x)/m cm³ (c) m(x+ y) cm³ (d) m(1/y - 1/x) cm³

58. A boy of mass 50 kg runs up a staircase of 45 steps in 9 seconds. If the height of each step is 15 cm, find his power. (g= 10 m/s²)

(a) 50 W (b) 220 W (c) 375 W (d) 500 W

59. A ball is thrown up with a kinetic energy of 20 J. If it reaches maximum height of 1m, the mass of the ball is:

(Take g= 10 m/s²)

(a) 1kg (b) 2 kg (c) 4 kg (d) 7 kg

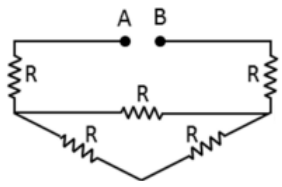
60. A person clapped his hand near a cliff and heard the echo after 5 seconds. What is the distance of the cliff from the person if the sped of the sound is 346 m/s?

(a) 692 m (b) 865 m (c) 1650 m (d) 1750 m

61. A wire of given material having length l and area of cross section A has a resistance of 4Ω. What would be the resistance of another wire of the same material having length l/2 and area of cross section 2A?

(a) 1 Ω (b) 2 Ω (c) 4 Ω (d) 8 Ω

62. What is the equivalent resistance between A and B in the circuit of figure, if R = 3Ω?



(a) 8 Ω (b) 12 Ω (c) 14 Ω (d) 16 Ω

63. Which of the following correctly describes the magnetic field near a long straight wire?

((a) The field consists of straight lines perpendicular to the wire.

(b) The field consists of straight lines parallel to the wire.

(c) The field consists of radial lines originating from the wire.

(d) The field consists of concentric circles cantered on the wire.

64. A typical solar cell generates electricity when exposed to the sun, of about

(a) 0.1 W (b) 0.5 W (c) 0.7 W (d) 1.0 W

65. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position of the image.

(a) 30 cm (b) 25 cm (c) 12 cm (d) 6 cm

66. The far point of a myopic person is 50 cm in front of the eye. The power of the lens required to correct this defect is

(a) + 1.0 D (b) +2.0 D (c) -2.0 D (d) -6.0 D

67. A ray of light travelling inside a rectangular glass block of refractive index $\sqrt{2}$ is incident on the glass air surface at an angle of incidence of 45°. The refractive index of air is 1. The ray will

(a) emerge into air without any deviation

(b) be reflected back into glass

(c) be absorbed

(d) emerge into air with an angle or refraction equal to 90°

68. Hydrogen has three isotopes (^{1}H, ^{2}H and ^{3}H) and chlorine has two isotopes ^{35}Cl and ^{37}Cl). HCL molecule having 18 proton, 19 neutrons and 18 electrons has the formula

(a) $^{1}H\ ^{35}Cl$ (b) $^{2}H\ ^{37}Cl$ (c) $^{2}H\ ^{35}Cl$ (d) $^{3}H\ ^{35}Cl$

69. What is the molarity of Na^{+} ion in a solution prepared by dissolving 0.550 gram of Na_2SO_4 in a volume of 100 ml water.

(a) 0.077 (b) 0.065 (c) 0.295 (d) 0.142

70. What is the molecular weight of phosphorous P_4 molecule?

(a) 31 (b) 124 (c) 148 (d) 256

71. The Tyndall effect is observed in

(a) NaCl solution (b) Copper sulphate solution (c) Soda water (d) Milk

72. Which of the following is a surface phenomenon?

(a) Boiling (b) Evaporation (c) Sublimation (d) Freezing

73. H_2 gas is not evolved when a metal reacts with HNO_3 acid because *

((a) HNO_3 is a strong oxidizing agent

(b) HNO_3 is a strong reducing agent

(c) HNO_3 is a strong reducing well as oxidizing agent

(d) HNO_3 does not react with metal

74. Mass of 3.011×10^{23} number of nitrogen (N) atoms is

(a) 14 g (b) 7 g (c) 3.5 g (d) 28 g

75. Formula of Aluminum sulphate is

(a) $Al_2\ SO_4$ (b) $Al_3(SO_4)_2$ (c) $Al_2(S0_4)_3$ (d) $Al\ (SO_4)_3$

76. Smoke is an example of

(a) Foam (b) Emulsion (c) Aerosol (d) Sol

77. Neutrons are not present in the nucleus of atoms of

(a) Hydrogen (b) Helium (c) Lithium (d) None of these

78. Select the balanced reaction

(a) $Fe(s)+4H_2O(g) \rightarrow Fe_3O_4(s)+4H_2(g)$ (b)$3Fe(s)+4H_2O(g) \rightarrow Fe_3O_4(s)+2H_2(g)$

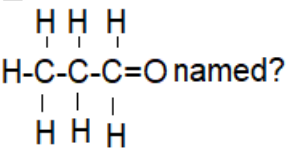
(c) $3Fe(s)+4H_2O(g) \rightarrow Fe_3O_4(s)+4H_2(g)$ (d)$3Fe(s)+2H_2O(g) \rightarrow 3Fe_3O_4(s)+2H_2(g)$

79. A solution contains 40 g of common salt in 320 g of water. What will be the concentration in terms of mass by mass percentage of the solution?

(a) 21% (b) 11.1% (c) 8.5% (d) 3.5%

80. Which of the following is not an allotrope of carbon ?

(a) Diamond (b) Graphite (c) Charcoal (d) Buckminsterfullerene

81. How is  named?

(a) Propanol (b) Propanal (c)Propanone (d) Propene

82. The reaction $CH_4 + Cl_2 \xrightarrow{h\nu} CH_3Cl+HCl$ is an example of

(a) addition reaction (b) combustion reaction

(c) oxidation reaction (d) substitution reaction

83. The functional group of Ketone is

(a)- OH (b) -CHO (c) -CO- (d) -COOH

84. Litmus solution is

(a) an acidic purple dye (b) a basic purple dye

(c) a neutral purple dye (d) none of the above

85. Carl Woese (1977) divided the Monera into:

(a) Archaebacteria and Eubacteria (b) Archaebacteria and Archaea

(c) Eubacteria and Bacteria (d) Eubacteria and Cyanobacteria

86. Mycorrhiza exhibits the phenomenon of

(a) Antagonism (b) Semiparasitism (c) Parasitism (d) Symbiosis

87. Which one of the following cell organelles helps to keep the cell clean by digesting any foreign material?

(a) Lysosomes (b) Mitochondria (c) Chloroplast (d) Leucoplast

88. Each pollen mother cell by a meiotic division, produces:

(a) One haploid microspore (b) Two haploid microspores

(c) Three haploid microspores (d) Four haploid microspores

89. Plant transport system does not transport

(a) CO_2 (b) Organic salts (c) Water (d) Plant hormones

90. Chromosomes are made up of:

(a) DNA (b) Protein (c) DNA and Protein (d) DNA and Fat

91. Plant carbon is supplied from:

(a) Soil (b) Air (c) Water (d) Sunlight

92. The hormone that promotes cell division in plants is:

(a) Auxin (b) Gibberellin (c) Cytokinin (d) Ethylene

93. Ciliated columnar epithelium is present in the

(a) Intestinal tract (b) Respiratory tract (c) Lining of Arteries (d) Lining of Veins

94. Correct sequence of components nephron is

(a) Bowman's capsule, PCT, Loop of Henle, DCT

(b) PCT, Loop of Henle, DCT, Bowman's capsule

(c) Loop of Henle, DCT, PCT, Bowman's capsule

(d) Bowman's capsule, DCT, PCT, Loop of Henle

95. Which organelle is involved in the formation of lysosomes:

(a) Endoplasmic Reticulum (b) Golgi Apparatus (c) Nucleus (d) Mitochondria

96. Chromatin material is made up of:

(a) DNA and proteins (b) Phospholipids (c) Sugars (d) Polysaccharides

97. Pollution of our surroundings in the recent past has resulted because of

(a) Biological research (b) Rapid industrialization

(c) Information technology (d) Forestation

98. Peptic ulcers are caused by:

(a) Helicobacter pylori (b) Rhizobium (c) Lactobacillus (d) Streptococcus

99. Sea anemone is an example of

(a) Porifera (b) Platyhelminthes (c) Coelenterata (d) Nematoda

100. Oxytocin is synthesized in the :

(a) Golgi apparatus (b) Endoplasmic reticulum (c) Mitochondria (d) Nucleus

Answer Key 2020

1.c	2.d	3.c	4.d	5.b	6.a	7.b	8.c	9.c	10.b	11.a	12.b
13.b	14.a	15.b	16.a	17.d	18.b	19.c	20.b	21.c	22.d	23.c	24.d
25.b	26.a	27.d	28.c	29.b	30.a	31.c	32.a	33.d	34.d	35.c	36.c
37.b	38.a	39.c	40.b	41.c	42.b	43.b	44.b	45.a	46.b	47.a	48.a
49.b	50.b	51.c	52.c	53.b	54.d	55.b	56.b	57.d	58.c	59.b	60.b
61.a	62.a	63.d	64.c	65.d	66.c	67.d	68.c	69.c	70.b	71.d	72.b
73.b	74.b	75.c	76.c	77.a	78.c	79.b	80.c	81.b	82.d	83.c	84.c
85.a	86.d	87.a	88.d	89.a	90.c	91.b	92.c	93.b	94.a	95.b	96.a
97.b	98.a	99.c	100.b								

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2021

1. If A = 2n + 13 and B = n + 7, n is the natural number, then HCF of A and B is

(a) 1 (b) 2 (c) 3 (d) 4

2. Which of the following numbers can be represented as non-terminating, repeating decimals?

(a) 39/24 (b) 3/16 (c) 137/25 (d) 3/11

3. Which of the following is greatest?

(a) 7^2 (b) $(49)^{3/2}$ (c) $(1/343)^{-1/3}$ (d) $(2401)^{-1/4}$

4. Simplifying

$$\frac{(0.6)^0 - (0.1)^{-1}}{\left(\frac{3}{8}\right)^{-1}\left(\frac{3}{2}\right)^3 + \left(\frac{-1}{3}\right)^{-1}}$$

we get :

(a) -1/2 (b) ½ (c) -3/2 (d) 3/2

5. The sum of all 3-digit numbers which are multiples of 7 is :

(a) 60336 (b) 70336 (c) 80336 (d) 90336

6. If the sum of first m terms of an AP is the same as the sum of its first n terms, then the sum of its (m + n) terms is

(a) 100 (b) 200 (c) 300 (d) 0

7. The denominator of a fraction is greater than its numerator by 11. If 8 is added to both its numerator and denominator, it becomes 3/4. Then the fraction is

(a) 16/27 (b) 25/36 (c) 10/21 (d) 12/23

8. If $a^2 = by + cz$, $b^2 = cz + ax$, $c^2 = ax + by$; then the value of $\frac{x}{a+x} + \frac{y}{b+y} + \frac{z}{c+z}$ will be

(a) 0 (b) 1 (c) $a + b + c$ (d) $\frac{1}{a} + \frac{1}{b} + \frac{1}{c}$

9. The value of k for which the zeroes of polynomial $kx^2 + 4x + 4$ are α and β, related to $\alpha^2 + \beta^2 = 24$ is

(a) 1, 2/3 (b) 1, -2/3 (c) -1, 2/3 (d) -1, -2/3

10. A train travels 288 km at a uniform speed. If the speed had been 4 km/hr more, it would have taken 1 hour less for the same journey. Then the speed of the train is

(a) 30 km/hr (b) 31 km/hr (c) 32 km/hr (d) 33 km/hr

11. If $x + 1/x = p$, then $x^6 + 1/x^6$ equal to

(a) $p^6 + 6p$ (b) $p^6 - 6p$ (c) $p^6 - 6p^4 + 9p^2 - 3$ (d) $p^6 - 6p^4 + 9p^2 - 2$

12. How many distinct real roots are possible for the equation

$x^6 - 26x^3 - 27 = 0$

(a) 6 (b) 2 (c) 3 (d) 5

13. The three vertices of a parallelogram are (3. 4). (3, 8) and (9, 8). The co-ordinates of the fourth vertex are

(a) (2,3) (b) (7,8) (c) (9,4) (d) (1,6)

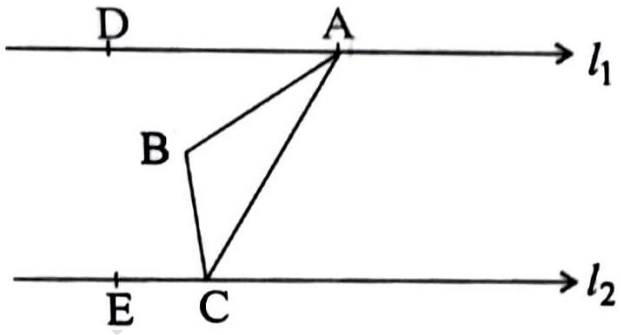
14. The vertices of a triangle are (1, a), (2, b) and (c^2, -3). The condition for which the centroid lies on x-axis is

(a) a + b = 0 (b) a + b = 3 (c) a – b = 3 (d) a – b = 0

15. A pole has to be erected at a point on the boundary of a circular park of diameter 13 metres in such a way that the differences of its distances from two diametrically opposite fixed gates A and B on the boundary is 7 metres. At what distances from the two gates should the pole be erected?

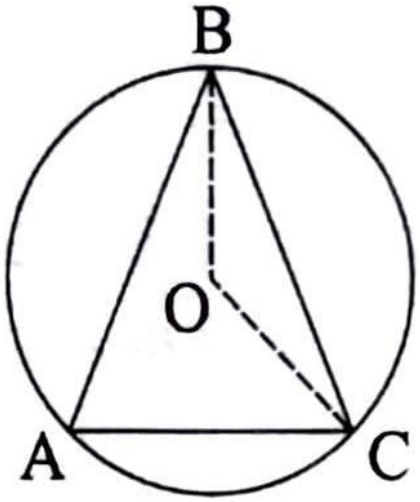
(a) 6 m and 13 m (b) 7 m and 14 m (c) 8 m and 10m (d) 5 mand 12m

16. l_1 and l_2 are two parallel lines as shown in figure. If AB and BC are the bisectors of ∠CAD and ∠ACE respectively, then ∠ABC =



(a) 90^0 (b) 60^0 (c) 45^0 (d) 30^0

17. In the figure shown AB = BC and ∠ABC = 36^0, ∠BOC is equal to (if O is the centre of circle)



(a) 36^0 (b) 72^0 (c) 108^0 (d) 144^0

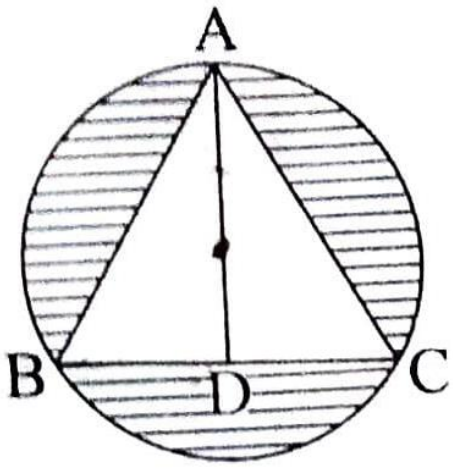
18. If the corresponding altitudes of two similar triangles are 6 cm and 9 cm respectively, then the ratio of their areas is

(a) 2:3 (b) 3:2 (c) 1:3 (d) 4:9

19. If G is the centroid of a triangle ABC, then the area of triangle GAB is equal to

(a) 1/4 (ar ΔABC) (b) 2/3 (ar ΔABC) (c) 1/3 (ar ΔABC) (d) ½ (ar ΔABC)

20. In the given figure, ABC is an equilateral triangle inscribed in a circle of radius 8 cm. Area of the shaded portion will be



(a) $(32\pi - 56\sqrt{3})$ cm^2 (b) $(64\pi - 56\sqrt{3})$ cm^2

(c) $(32\pi - 48\sqrt{3})$ cm^2 (d) $(64\pi - 48\sqrt{3})$ cm^2

21. Water flows in a tank of dimensions 150 m x 100 m at the base, through a rectangular pipe whose cross-section is 2 dm x 1.5 dm at the speed of 15 km/hour. In what time, will the water be 3 metres deep?

(a) 1 hour (b) 2 hours (c) 60 hours (d) 100 hours

22. Vertical and horizontal cross-sections of right cone are always, respectively

(a) rectangular, ellipse (b) triangle, circle (c) triangle, square (d) circle, triangle

23. ABCD is a cyclic quadrilateral in which AC and BD are its diagonals. If $\angle DBC = 55^0$ and $\angle BAC = 45^0$, then $\angle BCD$ will be

(a) 80^0 (b) 60^0 (c) 70^0 (d) 110^0

24. The minimum value of $2 \sin^2 \Theta + 3 \cos^2 \Theta$ is

(a) 0 (b) 1 (c) 2 (d) 3

25. If angles A, B and C of a ΔABC form an increasing arithmetic progression, then sin B =

(a) ½ (b) $\sqrt{3}/2$ (c) 1 (d) $1/\sqrt{2}$

26. An aeroplane when 3000 m high passes vertically above another aeroplane at an instance when their angles of elevation at the same observation point are 60^0 and 45^0. Then the distance between the aeroplanes are :

(a) 1000m (b) 1160m (c) 1268m (d) 1350m

27. In a pack of 90 cards, each card is marked with a different number from 110 to 199. A card was selected at random, the probability that the number on it is not a perfect square is

(a) 41/45 (b) 43/45 (c) 37/45 (d) 13/15

28. The probability of getting exactly one head in tossing a pair of fair coins is

(a) 0 (b) ¼ (c) 1/2 (d) 1/3

29. For the following distribution

Marks	Less than					
No of Students	20	40	60	80	100	120
	4	12	25	56	74	80

The modal class is :

(a) 20-40 (b) 40-60 (c) 60-80 (d) 80-100

30. A grandfather, two fathers and two sons went to the movie theatre together and everyone bought one movie ticket each. How many tickets did they buy in total?

(a) 2 (b) 3 (c) 4 (d) 5

31. Shooter Alessandra Perilli won first ever Olympic medal for which of the following country in Tokyo 2020 Olympics .

(a) Barbados (b) Malta (c) Monaco (d) San Marino

32. Who among the following has the right to speak in the House of Parliament?

(a) Chief Justice of India (b) Chief Election Commissioner

(c) The Attorney General (d) Governor, Reserve Bank of India

33. Shanti Swarup Bhatnagar Award is given for one's contribution to

(a) sports (b) journalism (c) science and technology (d) literature

34. The New Education Policy 2020 replaces the previous National Policy on Education which was adopted in the year

(a) 1985 (b) 1986 (c) 1987 (d) 1988

35. As per 2011 census, the least densely populated state of India is

(a) Arunachal Pradesh (b) Nagaland (c) Mizoram (d) Sikkim

36. Sonal Mansingh is associated with

(a) Bharatanatyam (b) Manipuri (c) Mohiniyattam (d) Sattriya

37. Official languages are mentioned in which schedule of the Indian Constitution?

(a) Sixth Schedule (b) First Schedule (c) Ninth Schedule (d) Eighth Schedule

38. 'SUMAN' scheme of the government of India is related to

(a) prevention of maternal and new-born death (b) eradication of poverty

(c) promotion of heritage learning (d) recapitalization of PSU Banks

39. The Token Currency in India was introduced by

(a) Iltutmish (b) Alauddin Khalji

(c) Muhammad bin Tughluq (d) Sikandar Lodi

40. The Urdu journal "Tahzeebul Akhlaq" is also called as

(a) Tatler (b) Mohammedan Culture and Manners

(c) Mohammedan Social Reformer (d) Spectator

41. The 'Deluge' (Great Flood) occurred in the period of :

(a) Prophet Nuh (b) Prophet Lut (c) Prophet Ibrahim (d) Prophet Zakariya

42. In Islamic history the ninth year of the Hijrah is known as

(a) year of deputations (b) year of sorrow

(c) year of joy (d) year of caliphate

43. Sir Syed Ahmad Khan died on

(a) 17 March 1898 (b) 27 March 1898

(c) 17 October 1898 (d) 27 October 1898

44. The number of books in 'Sihah Sitta' are :

(a) 2 (b) 4 (c) 6 (d) 7

45. The second battle of Panipat was fought in the year :

(a) 1526 (b) 1550 (c) 1556 (d) 1560

46. Ghyasuddin Balban succeeded :

(a) Qutubuddin Aibak (b) Iltutmish (c) Nasir Khusraw (d) Razia Sultana

47, Shrine of Baba Farid Ganj-Shakkar is situated at :

(a) Multan (b) Pakpattan (c) Hyderabad (d) Amritsar

48. Of the following, who was an associate of Sir Syed Ahmad Khan

(a) Maulana Qasim Nanoutvi (b) Maulana Shaukat Ali

(c) Maulvi Chiragh Ali (d) Muhammad Ali Jauhar

49. Books not authored by Maulana Shibli :

(a) Rahmat-i-Aalam (b) Al-Farooq (c) Imam Abu Hanifah (d) Ilm al-Kalam

50. The famous Agra Fort was built by King

(a) Babur (b) Shah Jahan (c) Akbar (d) Aurangzeb

51. A car of mass 200 kg moves with an initial speed of 72 km/hr. If on applying brakes, a constant deceleration of 0.2 m/s is produced, the distance covered by the car before it stops would be

(a) 0.1 km (b) 1.0 km (c) 0.5 km (d) 2.0 km

52. A car starts from rest and moves along y-direction with a uniform acceleration of $6m/s^2$ for 6 seconds, and it then continues with a uniform velocity. The total distance covered by the car in 10 seconds since it started from the rest will be

(a) 252 m (b) 260 m (c) 300 m (d) 360 m

53. Abdul, while driving to school, computes the average speed for his trip to be 20 km/h. On his return trip along the same route, there is less traffic and the average speed is 30 km/h. What is the average speed for Abdul's trip ?

(a) 25 km/h (b) 24 km/h (c) 22 km/h (d) 21 km/h

54. If a body of mass 40 kg moving initially with a speed of 30 m/s is subjected to a retarding force of 60 N, the body will stop after

(a) 30 seconds (b) immediately (c) 20 seconds (d) 15 seconds

55. A hammer of mass 500 gram moving at 50 m/s, strikes a nail. The nail stops the hammer in a very short time of 0.01 s. What is the force of the nail on the hammer?

(a) 25 N (b) 250 N (c) 2500 N (d) 6500 N

56. Acceleration due to gravity on earth is g. If g' is acceleration due to gravity at a height 'h' above the surface of earth, then

(a) g' = g (b) g' < g (c) g' > g (d) g' = 0

57. A motorbike takes 30 kJ energy to increase its initial kinetic energy to 10 kJ and velocity 18 km per hour in 10 seconds. The final velocity attained by the motorbike will be _____ km per hour.

(a) 20 (b) 27 (c) 30 (d) 36

58. A particle is thrown up vertically with a velocity of 50 m/s. The height up to which particle can rise is ($g = 10\ m/s^2$)

(a) 50 m (b) 100m (c) 125 m (d) 150 m

59. Wire A is of length 40 cm and radius 2 mm, wire B is of length 25 cm and radius 3 mm respectively. Ratio of the resistances R_A/R_B will be

(a) 5/18 (b) 5/12 (c) 12/5 (d) 18/5

60. A stone is dropped from the top of a tower 500 m high into a pond of water at the base of the tower. When is the splash heard at the top? (Given $g = 10\ m/s^2$ and speed of sound = 340 m/s)

(a) 10 seconds (b) 11.47 seconds (c) 12.37 seconds (d) 13.23 seconds

61. In a hydro power plant

(a) Water is converted into steam to give electricity

(b) Chemical processing of water produces electricity

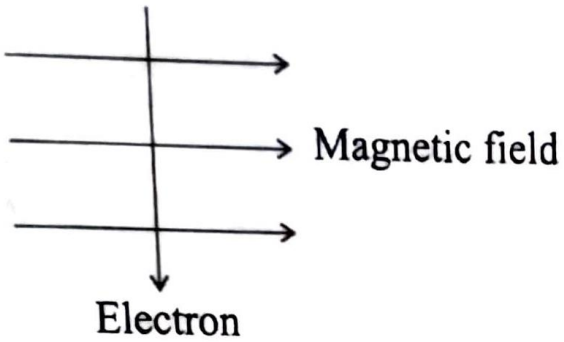
(c) Potential energy of the stored water is converted into electricity

(d) Kinetic energy in the stored water is converted into electricity

62. A body of mass 5 kg initially at rest, is moved by a horizontal force of 2 N on a smooth horizontal surface. The work done by the force in 10 seconds is

(a) 10 J (b) 20 J (c) 40 J (d) 50 J

63. An electron enters a magnetic field at right angles to it, as shown in figure below. The direction of force acting on the electron will be



(a) to the right (b) to the left (c) out of the page (d) into the page

64. A sound wave has a frequency of 1000 Hz and wavelength 25 cm respectively. Time taken by it to move through 1 km will be:

(a) 2 seconds (b) 4 seconds (c) 6 seconds (d) 8 seconds

65. An electric refrigerator rated 400 W operates 10 hours/day. What is the cost of energy to operate it for 30 days at rate Rs. 3.00 per unit?

(a) Rs. 90.00 (b) Rs. 300.00 (c) Rs. 360.00 (d) Rs. 400.00

66. An object is placed at 25 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image?

(a) 15 cm (b) 30 cm (c) 37.5 cm (d) 42.5 cm

67. Three resistors each of 8 Ω are connected to a triangle. The resistance between any two terminals will be

(a) 1/24 Ω (b) 3/16 Ω (c) 16/3 Ω (d) 24 Ω

68. Propane with molecular formula C_3H_8 has _____ covalent bonds.

(a) 6 (b) 7 (c) 8 (d) 9

69. The organic compound 'urea' in laboratory was first prepared from

(a) ammonium cyanate (b) ammonium thiocyanate

(c) ammonium isothiocyanate (d) ammonium carbonate

70. The formula of butanoic acid is

(a) $CH_3CH_2CH_2CH_2COOH$

(b) $HOOCCH_2CH_2CH_2CH_3$

(c) $CH_3\text{-}CH_2\text{-}CH(COOH)\text{-}CH_3$

(d) $CH_3CH_2CH_2COOH$

71. Which of the metal would be displaced from solution of its salt by other three metals?

(a) Mg (b) Ag (c) Zn (d) Cu

72. The number of particles in 46 g of Na atoms is :

(a) 6.022×10^{23} (b) 12.044×10^{23} (c) 3.011×10^{23} (d) 6.022×10^{22}

73. Heating of ferrous sulphate ($FeS0_4$) gives:

(a) Ferric oxide (b) Sulphur dioxide (c) Sulphur trioxide (d) All of above

74. Burning of paper is

(a) Physical change (b) Chemical change

(c) Biological change (d) (a) and (b) both

75. Which of the following pair of compounds are homologous?

(a) CH_4 and C_2H_6 (b) C_2H_6 and C_3H_8 (c) C_3H_8 and C_4H_{10} (d) All of the above

76. 0.5 gm of a substance is dissolved in 25 gm of a solvent. The percentage amount of the substance in the solution is

(a) 1 .960% (b) 1.69% (c) 19.6% (d) 16.9%

77. The electronic configuration of the element $^{40}_{20}X$ is

(a) 2, 8, 10 (b) 2, 10, 8 (c) 2, 8, , 2 (d) 2, 8, 18, 8, 4

78. Which of the following does not promote corrosion?

(a) Uneven metal surface

(b) Position of the metal in the reactivity series

(c) Presence of salt in water vapours

(d) Copper carbonate

79. The molar mass of sulphur molecule is

(a) 32 (b) 64 (c) 256 (d) 200

80. XCl_2 is ionic chloride of an element 'X'. The element 'X' belongs to which group and is similar to which element?

(a) Group 2, Magnesium (b) Group 1, Potassium

(c) Group 16, Sulphur (d) Group 17, Bromine

81. Which gas is the major greenhouse gas?

(a) CH_4 (b) SO_2 (c) SO_3 (d) CO_2

82. Which one is the ore of Zinc?

(a) Magnetite (b) Calamine (c) Bauxite (d) Haematopyrite

83. Which of the following is not true about electrorefining of metal?

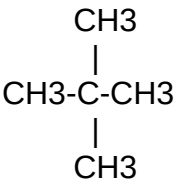
(a) A pure metal is deposited at cathode

(b) A pure metal from cathode dissolves in the electrolyte

(c) Copper, silver and gold are extracted by electrorefining

(d) Impure metal is made as anode

84. The following compound



is named as

(a) isobutane (b) neopentane (c) isopropane (d) n-pentane

85. Light dependent stages in photo-synthesis cannot be carried out without

(a) Oxygen (b) Carbon dioxide (c) Water (d) Hydrogen

86. In reflex action, the reflex arc, is formed by :

(a) Receptor - Spinal cord – Muscles (b) Spinal cord - Receptor - Muscles

(c) Muscles - Receptor – Brain (d) Muscles - Spinal cord - Brain

87. Nuclear membrane and membrane-bound cell organelles are absent in

(a) Bacteria (b) Cladophora (c) Ulva (d) Chara

88. Involuntary actions such as blood pressure, salivation in a human brain are controlled by

(a) Cerebrum (b) Cranium (c) Hypothalamus (d) Medulla

89. Which plant cells allow transport of water and minerals vertically?

(a) Tracheid's and companion cells (b) Tracheid's and vessels

(c) Vessels and companion cells (d) Vessels and sieve cells

90. Kingdom Monera includes

(a) Red yellow algae (b) Red brown algae

(c) Blue green algae (d) Green algae

91. In which cell organelles the complex sugars may be made from simple sugars ?

(a) Endoplasmic reticulum (b) Golgi apparatus (c) Lysosomes (d) Mitochondria

92. Energy captured by green plants in a terrestrial ecosystem is about

(a) 1% (b) 3% (c) 5% (d) 10%

93. "Evolution occurs due to natural selection." This hypothesis was given by

(a) Edward Jenner (b) Charles Darwin (c) Lord Mendel (d) Louis Pasteur

94. Which is not an inherited disease ?

(a) Typhoid (b) Colour blindness (c) Haemophilia (d) Klinefelter

95. One of the best solutions to get rid off non-biodegradable wastes is

(a) Burning

(b) Recycling

(c) Dumping

(d) Burying

96. Who sacrificed her life along with 363 others in 1731 for the protection of 'Khejri' trees?

(a) Medha Patekar (b) Amrita Devi Bishnoi (c) Arundhati Roy (d) Gaura Devi

97. Hormone that causes wilting of leaves is

(a) Auxin (b) Gibberellin (c) Abscisic Acid (d) Cytokinine

98. Black rust of wheat is caused by a species of the genus

(a) Mucor (b) Rhizopus (c) Aspergillus (d) Puccinia

99. Mendel used number of contrasting characters of garden pea, among them one was

(a) White/violet flowers (b) White/red flowers

(c) Red/violet flowers (d) Yellow/violet flowers

100. Water canal system is found in

(a) Porifera (b) Coelenterate (c) Echinodermata (d) Mollusca

Answer Key 2021

1.a	2.d	3.b	4.c	5.b	6.d	7.b	8.b	9.c	10.c	11.d	12.b
13.c	14.b	15.d	16.a	17.d	18.d	19.c	20.d	21.d	22.b	23.a	24.c
25.b	26.c	27.b	28.c	29.c	30.b	31.d	32.c	33.c	34.b	35.a	36.a
37.d	38.a	39.c	40.c	41.a	42.a	43.b	44.c	45.c	46.d	47.b	48.c
49.a	50.c	51.b	52.a	53.b	54.c	55.c	56.b	57.d	58.c	59.d	60.b
61.c	62.c	63.d	64.b	65.c	66.c	67.c	68.c	69.a	70.d	71.b	72.b
73.d	74.b	75.d	76.a	77.c	78.d	79.c	80.a	81.d	82.b	83.b	84.b
85.c	86.a	87.a	88.d	89.b	90.c	91.b	92.a	93.b	94.a	95.b	96.b
97.c	98.d	99.a	100.a								

1. The displacement - time graph for two particles A and B are straight lines inclined at 30^0 with time axis and at 30^0 to displacement axis, respectively. The ratio of velocities of the two particles is

(a) 1 (b) 1/3 (c) 2/3 (d) 1/4

2. A particle is moving in a circular path of radius r. The displacement after quarter a circle would be:

(a) Zero (b) $r\sqrt{2}$ (c) πr (d) 2r

3. Two balls of mass 50 g and 20 g travelling towards each other with speeds 8m/s and 5m/s respectively, collides and starts moving opposite to each other with the common speed. The distance between the balls after 3 seconds will be

(a) 0 m (b) 60 m (c) 30 m (d) 40 m

4. An object of mass 100 kg is accelerated uniformly from a velocity of 5 m/s to 8 m/s in 6 seconds. The magnitude of the force exerted on the object is:

(a) 500 N (b) 800 N (c) 100 N (d) 50 N

5. A geostationary satellite is orbiting the earth at a height 5R above the surface of earth, where 'R' is radius of earth. The time period of another satellite at a height of 2R from the surface of earth will be _____.

(a) 6 h (b) $2\sqrt{6}$ h (c) $6\sqrt{2}$ h (d) 2 h

6. Average density of the earth in terms of g, G and R is given by: Where:

g - Acceleration due to gravity

G - Gravitational constant

R - Earth's radius

(a) $\frac{3G}{4\pi gR}$ (b) $\frac{3g}{4\pi GR}$ (c) $\frac{3RG}{4\pi g}$ (d) $\frac{3gR}{4\pi G}$

7. The difference in final and initial kinetic energies for a particle of mass 20 g in travelling a distance of 120 m with a constant acceleration of 4.1 m/s^2 is:

(a) 4.92 J (b) 0 J (c) 19.62 J (d) 9.84 J

8. A body weighs 32 N in water and its relative density is 3.5 . Weight of the body in air is:

(a) 44.8 N (b) 116 N (c) 224 N (d) 12.8 N

9. The sound waves produced by a sitar are :

(a) transverse (b) longitudinal

(c) both transverse and longitudinal (d) ultrasonic in nature

10. A piece of wire of resistance R is cut into five equal parts. These parts are then connected in parallel. If equivalent resistance of this combination is R^1, then the ratio is R/R^1 is

(a) 1/25 (b) 1/5 (c) 5 (d) 25

11. If an electric iron of 1000W is used for 30 minutes every day, electric energy consumed in the month of April would be :

(a) 12 kWh (b) 15 kWh (c) 18 kWh (d) 16 kWh

12. The magnetic field inside a long straight solenoid carrying current :

(a) is zero (b) decreases as we move towards its end

(c) is same at all points (d) increases as we move towards its end.

13. An induced emf is produced when a magnet is plunged into a coil. The magnitude of induced emf does not depend on

(a) the number of turns in the coil (b) the speed with which the magnet is moved

(c) the strength of the magnet (d) the resistivity of the material of the coil

14. The twinkling of stars is due to

(a) The change in intensity of light coming from the stars

(b) Atmospheric refraction of star's light

(c) Gradual change in optical density of air at every moment

(d) AII of the above

15. A concave lens of focal length 25 cm and a convex lens of focal length 20 cm are placed in contact with each other. The power of the combination is

(a) -4 dioptre (b) 4 dioptre (c) 1 dioptre (d) -1 dioptre

16. A person cannot see distinctly any object placed beyond 50 cm from his eye. The power of the lens which will enable him to see distant star is:

(a) -2.5 D (b) -0.5 D (c) -2.0 D (d) -1.5 D

17. Wind power of a wind mill is:

(a) directly proportional to the radius of the blades

(b) directly proportional to the wind speed

(c) directly proportional to the cube of the wind speed

(d) directly proportional to the square of the wind speed

18. Using following reaction arrange the elements A ,B C and D in order of their redox activity:

$A + B^+ \longrightarrow A^+ + B$; $C^+ + D \longrightarrow$ No reaction

$B + D^+ \longrightarrow B^+ + D$; $B + C^+ \longrightarrow B^+ + C$

(a) A>B>C>D (b) D>C>B> A (c) D>C>A>B (d) A>B >D>C

19. Sodium metal is highly reactive to the moisture (water):

(a) Sodium forms covalent bond with water

(b) Sodium gains one electron to get stable octate i.e. Neon gas like configuration

(c) Sodium loses one electron to get stable octate i.e. Neon gas like configuration

(d) Sodium is highly soluble in water

20. How many nodes are present in 2s orbital :

(a) 1 (b) zero (c) 2 (d) 3

21. When the ferrous sulphate is heated, the green colour of the crystal is changed due to:

(a) formation of SO_3 gas (b) formation of SO_2 gas

(c) formation of Fe_2O_3 (d) ferrous sulphate crystals lose water

22. Which of the following is true for fullerenes

(a) Carbon atoms arranged in the shape of diamond like structure

(b) Carbon atoms arranged in the shape of graphite like structure

(c) Carbon atoms arranged in the shape of a Soccer ball

(d) Sulphur atoms arranged in the shape of a Soccer ball

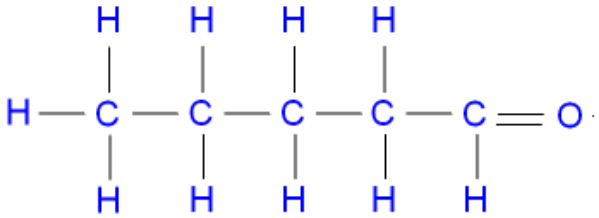
23. Oxidation number of the underlined element in following compounds are respectively

$\underline{Cd}S$, $\underline{Al}H_3$, $\underline{S_2}O_3^{2-}$, $Na_2\underline{Cr_2}O_7$

(a) +2, +3, +2 and +6 (b) -2, +3, +1 and +4

(c) +2, -3, +2 and +2 (d) +2, +3, +2 and +4

24. IUPAC name of the following molecule is:

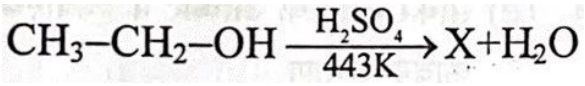


(a) Pentanol (b) Pentanal (c) Pentanone (d) Butaldehyde

25. Tomato is a natural source of :

(a) Acetic acid (b) Citric acid (c) Oxalic acid (d) Tartaric acid

26. What is 'X' in below reaction:

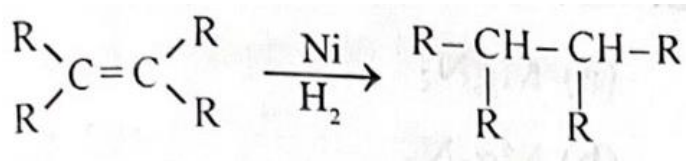


(a) CH_3CHO (b) $CH_2=CH_2$ (c) CH_3COCH_3 (d) CH_3COOH

27. Which class of compounds are used in making perfumes and as flavouring agents?

(a) Alcohols (b) Aldehydes (c) Carboxylic acids (d) Esters

28. The following reaction is an example of :



(a) Addition reaction (b) Substitution reaction (c) Oxidations (d) Reduction

29. Treatment of cancer is done using :

(a) Isotope of Uranium (b Isotope of Cobalt

(c) Isotope of Iodine (d) Isotope of Hydrogen

30. Soda acid fire extinguishers use :

(a) Na_2CO_3 (b) $NaHCO_3$ (c) $MgCO_3$ (d) $NaHCO_3 + Na_2CO_3$

31. pH of Ammonium Chloride (NH_4Cl) solution in water will be:

(a) Zero (b) 7 (c) More than 7 (d) Less than 7

32. Formula of Magnesium Nitride is

(a) MgN_2 (b) Mg_3N_2 (c) Mg_2N_3 (d) MgN

33. Burning of candle involves

(a) Physical change (b) Chemical change

(c) Both Physical and Chemical change (d) Only Chemical change

34. Group of elements showing both metallic and non-metallic properties:

(a) Boron, Silicon, Germanium (b) Boron, Sulphur, Germanium

(c) Sulphur, Phosphorous, Coke (d) Coke, Zinc, Sulphur

35. Large scale deforestation decreases :

(a) Soil erosion (b) Rainfall (c) Drought (d) Global warming

36. Sardar Sarovar Dam was built on the river Narmada in the year :

(a) 1950 (b) 1940 (c) 1960 (d) 1930

37. The vegetative propagation where a branch is defoliated and pegged down in the ground is called:

(a) Cutting (b) Layering (c) Grafting (d) None of the above

38. Bryophyllum is propagated vegetatively by means of :

(a) Bulbils (b) Leaf buds (c) Grafting (d) Layering

39. Palaeontology is the study of :

(a) Soil (b) Fossils (c) Cell (d) Pollen Grains

40. Out of the total water on the Earth fresh water reserves constitutes approximates:

(a) 70% (b) 2.7% (c) 10% (d) 8.9%

41. Which of the following relates to multipurpose protected areas meant for conservation of wildlife?

(a) National parks (b) Biosphere reserves (c) Wildlife sanctuaries (d) Rivers

42. World Water Day is celebrated on

(a) May 22 (b) June 05 (c) March 22 (d) April 11

43. The term Protoplasm was coined by :

(a) Robert Brown (b) Robert Hooke (c) Leeuwenhoek (d) Purkinje

44. Lenticels are present on :

(a) leaves (b) stems of soft herbaceous plants

(c) stems of hard and woody plants (d) root hairs

45. The whole process of anaerobic respiration takes place in

(a) chloroplast (b) mitochondrion (c) ribosome (d) cytoplasm

46. Which plant hormone promotes dormancy in seeds and buds

(a) Auxin (b) Gibberellin (c) Cytokinin (d) Abscisic acid

47. Female gametophyte is also known as :

(a) Embryo sac (b) Megaspore (c) Megaspore mother cell (d) Megasporangium

48. Anemophilous flowers are :

(a) Wind pollinated (b) Water pollinated (c Animal pollinated (d) Insects pollinated

49. The structural unit employed for vegetative propagation is called

(a) Propagule (b) Explant (c) Seed (d) None of the above

50. Which state has Indira Gandhi Canal for irrigation

(a) Rajasthan (b) Odisha (c) West Bengal (d) Karnataka

51. Sania wants to express 1000 in the form of a sum of positive integers involving only 8s. How many minimum 8s she requires to do so?

(a) 4 (b) 8 (c) 3 (d) 125

52. The largest positive integer which divides 434 and 539 leaving remainders 9 and 12 respectively is :

(a) 9 (b) 108 (c) 17 (d) 539

53. If $(-1)^n + (-1)^{8n} = 0$, then n is :

(a) a positive integer (b) any even numeral

(c) any odd natural number (d) any negative integer

54. Divya's swimming speed in still water to the speed of river is 7:1. She swims 4.2 km up the river in just 14 min. Time taken by Divya to swim 18.4 km down the river will be

(a) 11 min (b) 12 min (c) 23 min (d) 46 min

55. The value of k so that the following pair of equations have no solution:

$(3k+1)x + 3y - 2 = 0$

$(k^2+1)x + (k-2)y - 5 = 0$

(a) -4 (b) -2 (c) -3 (d) -1

56. If the polynomial $f(x) = x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by another polynomial

x^2-2x+k and the remainder comes out to be x+a then the value of k and a are respectively

(a) 2 3 (b) 3, 5 (c) 5,5 (d) 5, -5

57. If α, β are roots of the equation $x^2 – lx + m = 0$, then the value of $1/\alpha^2 + 1/\beta^2$ in terms of l and m is:

(a) $\frac{l^2-2m}{m^2}$ (b) $\frac{2l^2-m}{m^2}$ (c) $\frac{2m+l^2}{m^2}$ (d) $\frac{2l^2+m}{m^2}$

58. If α, β are the zeroes of a quadratic polynomial $f(x) = ax^2 + bx + c$, then

$\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha} =$

(a) $\frac{3abc}{a+b}$ (b) $\frac{3abc-a^3}{bc}$ (c) $\frac{3abc-b^3}{a^2c}$ (d) $\frac{3abc-c^3}{abc}$

59. The roots of the quadratic equation

$\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}; a + b \neq 0$ are:

(a) -a, -b (b) a, -b (c) -a, b (d) a, b

60. If the squared difference of the of zeroes of the quadratic polynomial f(x) = x^2+px+45 is equal to 144, the value of p is

(a) ±22 (b) ±30 (c) ±45 (d) ±18

61. An A.P. consists of 37 terms. The sum of the three middle terms is 225 and the sum of the last three terms is 429. Then A.P. is

(a) 3 ,8 ,13, 18, ……. (b) 2 ,6, 10, 14, ……...

(c) 3, 7, 11, 15, ……..... (d) 2, 7,12,17, …….

62. If the points (2, 1) and (1, -2) are equidistant from the point (x, y), then:

(a) x - 3y = 0 (b) x + 3y = 0 (c) 3x - y = 0 (d) 3x + y = 0

63. If the points P(6, 1), Q(8, 2), R(9, 4) and S(x, 3) are the vertices of a parallelogram, taken in order, then the value of x is

(a) 7 (b) 6 (c) 5 (d) 4

64. A point P(x, y) is such that PA = PB, where A (a+b, b-a) and B (a-b, a+b), then:

(a) ax = by (b) bx = ay (c) x = a^2y (d) None of these

65. In ∆ABC, right angled at C, if cot A= √3, the value of sin A Cos B + cos A sin B will be

(a) 0 (b) 1 (c) 1/√2 (d) ½

66. In triangle ABC, if D is a point on the side BC such that ∠ADC= ∠BAC, then CB.CD is equal to:

(a) AB^2 (b) BC^2 (c) CA^2 (d) AD^2

67. The circumcentre of the triangle ABC is O. Then ∠OBC + ∠BAC is

(a) greater than 90^0 (b) equal to 90^0 (c) less than 90^0 (d) greater than 180^0

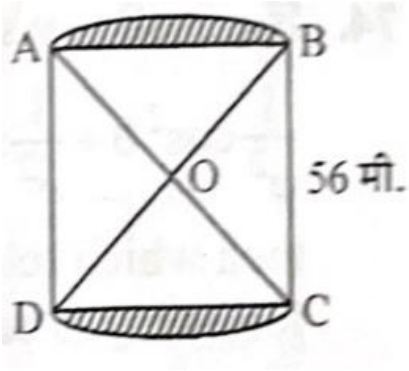
68. Area of a rectangle gets reduced by 14 square units, if its length is reduced by 4 units and breadth is increased by 2 units. If we increase the length by 6 units and the breadth by 1 unit the area increases by 91 square units. Area of the rectangle is

(a) 230 square units (b) 196 square units (c) 209 square units (d) 213 square units

69. ABCD is a parallelogram. Points P and Q on BC trisects BC in three equal parts. Then area of APQ is :

(a) ¼ area (ABCD) (b) $\frac{1}{5}$ area (ABCD) (c) $\frac{1}{6}$ area (ABCD) (d) $\frac{1}{3}$ area (ABCD)

70. In the given ,figure two circular flower beds have been shown on two sides of a square lawn ABCD of side 56m. If the centre of each circular flower bed is the point of intersection O of the diagonals of the square lawn, find the sum of the areas of the lawn and the flower beds :



(a) 4302 m^2 (b) 3402 m^2 (c) 1032 m^2 (d) 4032 m^2

71. The surface areas of six faces of rectangular solid are 4, 4, 8, 8, 18 and 18 cm^2. The volume of the solid is :

(a) 324 cm^3 (b) 60 cm^3 (c) 48 cm^3 (d) 24 cm^3

72. A right cylindrical vessel is full with water. How many right cones having same diameter and height as of right cylinder will be needed to store that water

(a) 2 (b) 3 (c) 4 (d) 5

73. If Cos 9α = sin α and 9α <90^0, then tan 5α = ?

(a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$ (c) 1 (d) 0

74. If $x\ Cos\ \theta - y\ Sin\ \theta = \sqrt{x^2 + y^2}$ and $\frac{1}{a^2}\ Cos^2\ \theta + \frac{1}{b^2}\ Sin^2\ \theta = \frac{1}{x^2+y^2}$ then which relationship among the following is correct?

(a) $\frac{x^2}{b^2} - \frac{y^2}{a^2} = 1$ (b) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ (c) $\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1$ (d) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$

75. Due to sun, a 6 feet man casts a shadow of 4,feet, whereas a pole next to the man casts a shadow of 36 feet. What is the height of the pole?

(a) 54 feet (b) 48 feet (c) 72 feet (d) 63 feet

76. A 1.5 m tall boy is standing at some distance from a 30 m tall building. The angle of elevation from his eyes to the top of the building increases from 300 to 600 as he walks towards the building. Then the distance he walked towards the building is :

(a) $19\sqrt{3}$ m (b) $20\sqrt{3}$ m (c) $21\sqrt{3}$ m (d) $22\sqrt{3}$ m

77. The mean of a set of observations x_1, x_2, x_3, ……., x_n is $\bar{x}$. If each observation is divided by 'α' and then increased by 'a', then the new mean is

(a) $\frac{\bar{x}}{\alpha} - a$ (b) $\bar{x} + \frac{a}{\alpha}$ (c) $\frac{\bar{x}}{\alpha} + a$ (d) $\alpha\bar{x} - a$

78. The median of set of 9 distinct observations is 20.5. If each of the largest 4 observations of the set is increased by 2, then the median of the new set:

(a) is increased by 2 (b) is decreased by 2

(c) is two times of the original number (d) remains the same as that of the original set

79. If an unbiased die is thrown twice, then the probability of 3 will not come up either time is:

(a) 2/3 (b) 5/6 (c) 25/36 (d) 35/36

80. If sin θ + cos θ = a and Sin^3 θ + Cos^3 θ = b, then the value of 3a – 2b is:

(a) a^3 (b) b^3 (c) 0 (d) 1

81. The autobiography of Subhash Chandra Bose is:

(a) The Indian Struggle (b) Towards Freedom

(c) My Country My Life (d) One Life is Not Enough

82. An island of the Andaman Islands, now named Netaji Subhash Chandra Bose Island, was formerly known as

(a) Neil Island (b) Havelock Island (c) Ross Island (d) St. Lawrence Island

83. Larry Tesler who died in February 2020 was inventor of computer command:

(a) Cut/Copy and Paste (b) Super Fix and Subscript

(c) Capitalisation in Lower and Upper Case (d) Bold, Italics and Underline

84. Who is the author of Ramacharitamanasa?

(a) Swami Vivekananda (b) Kabir Das (c) Tulsidas (d) Raja Ram Mohan Roy

85. Which British Governor General abolished Sati pratha?

(a) Lord Cornwallis (b) Lord Wellesley (c) Lord William Bentinck (d) Lord Dalhousie

86. 'Nagarhole National Park' is located in:

(a) Madhya Pradesh (b) Karnataka (c) Odisha (d) Rajasthan

87. The Mughal emperor, Humayun died due to:

(a) assassination by his son (b) an accidental fall from the stairs

(c) snake bite (d) arrow shot in the battle field

88. 'Kuchipudi' dance originated in

(a) Rajasthan (b) Andhra Pradesh (c) Karnataka (d) Punjab

89. The I.M.F. and World Bank are also known as

(a) Bretton Woods institutions (b) New York institutions

(c) Washington D.C. institutions (d) Beverley Hills institutions

90. 'Charminar Trophy' is associated with:

(a) Volleyball (b) Football (c) Golf (d) Athletics

91. The angel entrusted with the task of blowing the trumpet (sur) on the day of judgement is :

a) Hazrat Jibraeel (b) Hazrat Israfeel (c) Hazrat Izraeel (d) Hazrat Mikail

92. After Hijrah of Madina in whose house did the Prophet reside first in Madina?

(a) Hazrat Ma'az bin Jabal (b) Hazrat Abdullah

(c) Hazrat Abu Ayyub Ansari (d) Hazrat Umar

93. Which of the following books is not part of the 'Sihah-i-Sittah'?

(a) Sahih Muslim (b) Jamie Tirmidhi

(c) Sunan Nasa'I (d) Musnad Ahmad Ibn Hanbal

94. Hyder Ali took the control of Mysore in the year :

(a) 1754 (b) 1763 (c) 1771 (d) 1779

95. The task of placing diacritical marks on the Quran was undertaken by:

(a) Hazrat Abu Bakr (b) Zayd B. Thabit (c) Hazrat Ali (d) Hajjaj Ibn Yusuf Thaqafi

96. The last Quranic verse was revealed to the Prophet in :

(a) Muzdalfa (b) Mount Safa (c) Marwah (d) Arafat

97. Khwaja Moinuddin Chishti was born in the year :

(a) 1143 AD (b) 1173 AD (c) 1236 AD (d) 1266 AD

98. Tipu Sultan was born in the year :

(a) 1750 (b) 1755 (c) 1763 (d) 1765

99. The famous Qutub Minar is said to be built by Qutubuddin Aibak but the last two storeys were completed by :

(a) lltutmish (b) Firoz Shah Tughlaq (c) Sher Shah Suri (d) Sikandar Lodi

100. Tafsir' 'al-Quran is a commentary of the Quran written by

(a) Ashraf Ali Thanvi (b) Maulana Shibli

(c) Maulana Abul Kalam Azad (d) Sir Syed Ahmad Khan

Answer Key 2022

1.b	2.b	3.b	4.d	5.c	6.b	7.d	8.a	9.b	10.d	11.b	12.c
13.d	14.d	15.c	16.c	17.c	18.a	19.c	20.a	21.d	22.c	23.a	24.b
25.c	26.b	27.d	28.a	29.b	30.b	31.d	32.b	33.c	34.a	35.b	36.b
37.b	38.b	39.b	40.b	41.b	42.c	43.d	44.c	45.d	46.d	47.a	48.a
49.a	50.a	51.b	52.c	53.c	54.d	55.d	56.d	57.a	58.c	59.a	60.d
61.c	62.b	63.a	64.b	65.b	66.c	67.b	68.c	69.c	70.d	71.d	72.b
73.c	74.b	75.a	76.a	77.c	78.d	79.c	80.a	81.a	82.c	83.a	84.c
85.c	86.b	87.b	88.b	89.a	90.d	91.b	92.c	93.d	94.b	95.d	96.d
97.a	98.a	99.b	100.d								

AMU Class XI (Science)/Diploma in Engg. Entrance Test 2023

1. Which of the following is an irrational number?

(a) 0.254254254……. (b) 22/7 (c) 0.12012001200012…. (d) 0.053125

2. If A > B and C < 0 which of the following is not true?

(a) AC < BC (b) A + C > B + C (c) A – C < B – C (d) Both (a) and (b) are true

3. 12 typist working for 4 hours to type a book in 18 days. In how many days 4 typist will work for 8 hours to type same book?

(a) 27 (b) 30 (c) 33 (d) 36

4. The sum of a two digit number obtained by reversing its digit is a square number. How many such numbers are there?

(a) 5 (b) 6 (c) 7 (d) 8

5. The pair of equations x + 2y + 5 = 0 and -3x – 6y + 1 = has:

(a) unique solution (b) exactly two solutions

(c) infinitely many solutions (d) no solution

6. If $x = 3 + \sqrt{8}$, then the value of $x^2 + 1/x^2$ is:

(a) 24 (b) 34 (c) 44 (d) 18

7. Which of the following is a polynomial?

(a) $x^2 + x^{-2}$ (b) $\sqrt{3x} + 9$ (c) $x^2 + 2x - \sqrt{x} + 3$ (d) $\sqrt{3} + 2x - x^2$

8. The polynomial

$f(x) = (x^4 – x^3 – 11x^2 – x + a)$ is divisible by (x + 3), for a =

(a) -8 (b) -12 12 (d) -6

9. If the roots of the equation $(a – b)x^2 + (b – c)x + (c – a) = 0$ are equal, then find the value of b + c:

(a) 2a (b) 4b (c) 6a (d) 3a

10. If a – b, a and a + b are zeroes of the polynomial $x^3 – 3x^2 + x + 1$ then the value of (a + b) is:

(a) $1 \pm \sqrt{2}$ (b) $-1 + \sqrt{2}$ (c) $-1 - \sqrt{2}$ (d) 3

11. If $a/b + b/a = 1$, then the value of $a^3 + b^3$ is:

(a) 1 (b) -1 (c) ½ (d) 0

12. The 5th term of an AP is 11 and its 9th term is 35. The common difference of the AP is:

(a) 4 (b) -4 (c) 6 (d) -6

13. Let a be the nth term an AP. If

$$\sum_{r=1}^{100} a_{2r} = \alpha \text{ and } \sum_{r=1}^{100} a_{2r-1} = \beta,$$

then the common difference of the AP is:

(a) $\frac{\alpha-\beta}{100}$ (b) β – α (c) $\frac{\alpha-\beta}{200}$ (d) α – β

14. The value of tan 1º, tan 2º, tan 3º ……. tan 89º is equal to:

(a) 0 (b) ∞ (c) 1/3 (d) 1

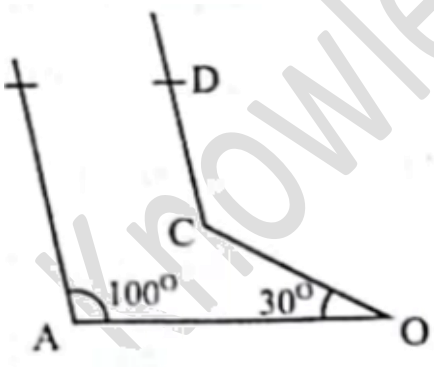
15. $sec^2 10 - cot^2 80 + \frac{\sin 15 \cos 75 + \cos 15 \sin 75}{\cos\theta \sin(90-\theta) + \sin\theta \cos(90-\theta)}$ is equal to:

(a) 2 (b) 1 (c) 0 (d) 3

16. Let A, B, C, D be the angles of a quadrilateral. If they are concyclic, then the value of cos A cos B+ cos C+ cos D is:

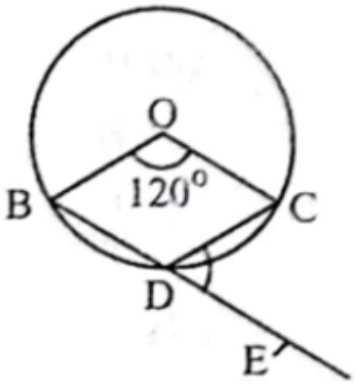
(a) 0 (b) 1 (c) -1 (d) 2

17. In figure AB||CD. If ∠AOC = 30º and ∠OAB = 100º then ∠OCD = ?



(a) 150º (b) 100º (c) 130º (d) 80º

18. A circle with centre O is shown in figure. If ∠BOC = 120º, then ∠CDE will be of:



(a) 30º (b) 45º (c) 60º (d) 15º

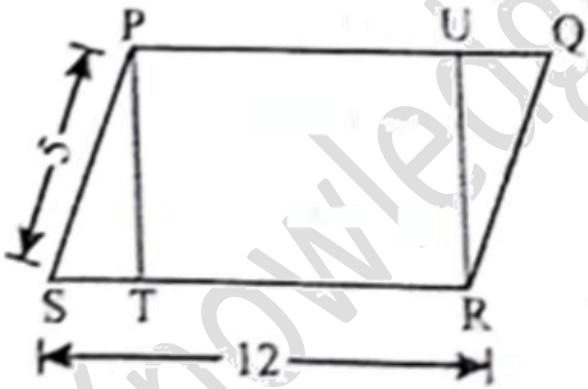
19. If AB = 12cm and BC = 16cm and AB ⊥ BC, then the radius of the circle passing through A, B and C is:

(a) 6 cm (b) 8 cm (c) 10 cm (d) 20 cm

20. The area of the sector of a circle of radius 4 cm and of angle 30º is:

(a) 4.02 cm^2 (b) 4.19 cm^2 (c) 4 cm^2 (d) 22/7 cm^2

21. The are of the parallelogram PQRS, shown in figure, is 36 units. The area of quadrilateral PURT if PT||UR and PT ⊥ SR is:



(a) 9 units (b) 64 units (c) 24 units (d) 12 units

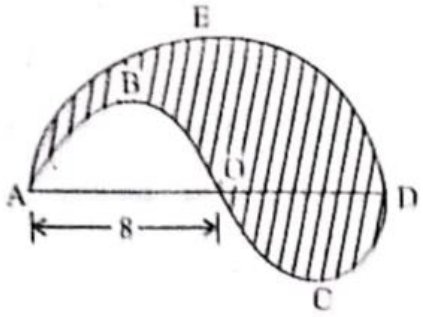
22. A conical flask is full of water. The flask has base radius ‘r’ and height ‘h’. This water is poured into a cylindrical flask of base radius 'm', height of water in cylindrical flask is:

(a) $m/2h$ (b) $\frac{h}{2}m^2$ (c) $2h/m$ (d) $\frac{r^2h}{3m^2}$

23. The height of the cone is 30 cm. A small cone is cut off at the top by a plane parallel to its base. If its volume is of 1/27 of the volume of the cone. At what height above the base, is the section made?

(a) 6cm (b) 8 cm (c) 10 cm (d) 20 cm

24.The area of the shaded region will be (O is the center of semicircle AED; ABO and OCD are also semicircles):



(a) 64 π (b) 32 π (c) 16 π (d) 8 π

25. A farmer connects a pipe of internnl diameter 25 cm from a canal into a cylindrical tank in his field which is 12 m in diameter and 2.5 m deep. If water flows through the pipe at the rate of 3.6 km/hr, the tank will be lilled in:

(a) 4/5 hrs (b) 8/5 hrs (c) 6/5 hrs (d) 7/5 hrs

26. The points (a, a), (-a, -a) and (-√3 a, √3 a) form the vertices of:

(a) a right angle triangle (b) an equilateral triangle

(c) an isosceles triangle (d) a scalene triangle

27. 2 boys and 2 girls are in Room A and 1 boy and 3 girls in Room B. The total number of otltcomes for the experiment, in which a room is selected and then a person, are:

(a) 4 (b) 2 (c) 6 (d) 8

28. What is the probability that a number selected at random from the numbers 1, 2, 2, 3, 3, 3, 4, 4, 4 and 4 will be their average?

(a) 2/5 (b) 1/10 (c) 2/7 (d) 3/10

29. What is the chance of having 53 Sundays in a leap year?

(a) 1/7 (b) 2/7 (c) 3/7 (d) 4/7

30. Arithmetic mean of n numbers x_1, x_2, …. x_n is A. If x_n is replaced by $(n+1)x_n$ then the new average is:

(a) $\frac{(n-1)\,A + nx_n}{n}$ (b) $\frac{nA + (n+1)A + x_n}{n}$ (c) $\frac{(n+1)A + nx_n}{n}$ (d) $(A + x_n)$

31. Al-Aqsa Mosque, which was in news recently is located in which city?

(a) Rome (b) Jerusalem (c) Riyadh (d) Muscat

32. Which of the following former Japanese Prime Minister was assassinated in 2022?

(a) Naoto Kan (b) Yoshihide Suga (c) Shinzo Abe (d) Yoshihiko Noda

33. The US House of Representatives Speaker Nancy Pelosi was in news because of her visit in August, 2022 to:

(a) Taiwan (b) South Korea (c) Japan (d) China

34. Which one of the following fundamental rights is also available to foreigners in India?

(a) Article 15 - Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth

(b) Article 16 - Equality of opportunity in matters of public employment

(c) Article 25 - Freedom of Religion

(d) Article 29 - Protection of language, script and culture of minorities

35. Which of the following can a court issue for enforcement of Fundamental Rights?

(a) Decree (b) Writ (c) Ordinance (d) Notification

36. Who is the author of the book “Anand Math"?

(a) Bankimchandra Chattopadhyay (b) Rabindranath Tagore

(c) M. K. Gandhi (d) Sarojini Naidu

37. In which of the following states is black soil found?

(a) Jamrnu and Kashmir (b) Gujarat (c) Rajasthan (d) Jharkhand

38. Which one of the following is a rabi crop?

(a) Rice (b) Gram (c) Millets (d) Cotton

39. The term ‘Butterfly Stroke’ referred to in which sport:

(a) Wrestling (b) Volleyball (c) Tennis (d) Swimming

40. Rakesh Jhunjhunwala who passed away recently was associated with which profession?

(a) Politician (b) Investor (c) Scientist (d) Musician

41. On the occnsion of the Treaty of Hudaybiya rumour was spread of the death of which companion (Sahabi)?

(a) Khalid b. Walid (b) Hamza (c) Umar (d) Uthman

42. The title 'al-Farooq' is associated with which Sahabi?

(a) Abu Bakr (b) Umar b. Khattflb (c) Uthman Ghani (d) Ali Murtaza

43. Who experimented with the 'Control of the Markets'?

(a) Sikandar Lodi (b) Alauddin Khalji

(c) Mohammad bin Tughlaq (d) Gheyasuddin Balban

44. The founder of Syed Dynasty was:

(a) Khizr Khan (b) Daulat Khan (c) Muhammad Shah (d) Sikandar Lodi

45. Mndarsatul Uloom in Aligarh was founded by Sir Syed Ahmad Khan in the year .

(a) 1870 (b) 1875 (c) 1880 (d) 1885

46. The 'Battle of Plassey' was fought in the year :

(a) 1757 AD (b) 1800 AD (c) 1900 AD (d) 1617 AD

47. The Victoria School was establishcd by Sir Syed Ahmad Khan at:

(a) Aligarh (b) Meerut (c) Ghazipur (d) Muradabad

48. The 'Comrade', an English weekly was launched by:

(a) Maulana Muhammad Ali Jauhar (b) Sir Syed Ahmad Khan

(c) Maulana Shibli Nu'mani (d) Maulana Abul KaJam Azad

49. Tipu Sultan succecded to the throne of the Kingdom of Mysore in the year:

(a) 1754 (b) 1768 (c) 1782 (d) 1790

50. Who among the following was the leading disciple of Khwaja Moinuddin Chisti?

(a) Iltutmish (b) Qutbuddin Bakhtiyar Kaki

(c) Nizamuddin Awliya (d) Fariduddin Ganj-e-Shakar

51. A train travels some distance with a speed of 30 km/hr and returns with a speed of 45 km/hr. The average speed of the train is:

(a) 36.0 km/hr (b) 34.5 km/hr (c) 36.8 km/hr (d) 37.5 km/hr

52. The numerical ratio of distance to displacement for a moving object is:

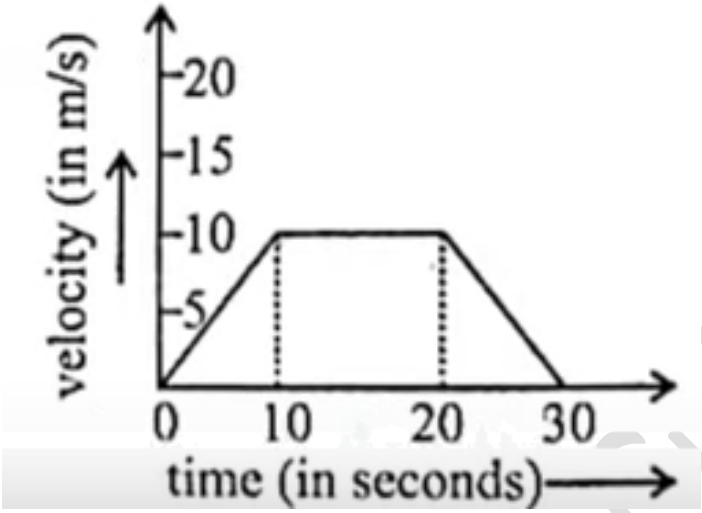
(a) always less than one (b) less than or equal to one

(c) always greater than one (d) greater than or equal to one

53. A and B are two spherical objects. If object B is twice larger than object A; but their densities are same. The ratio of force required to move them at same rate will be :

(a) 1:8 (b) 2:1 (c) 4:1 (d) 8:1

54. In the following velocity - time graph, the distance travelled by the body in meters is :



(a) 200 (b) 250 (c) 300 (d) 400

55. The force of attraction between two unit point masses separated by a unit distance is called

(a) Gravitational potential (b) Acceleration due tO gravity

(c) Gravitational field (d) Universal gravitational Constant

56. A body weighs 64 N on the surface of the earth. If the diameter of the earth becomes two times its present value and its volume and mass remains unchanged, then weight of the body on the new surface of the earth is equal to:

(a) 64 N (b) 28 N (c) 20 N (d) 16 N

57. A 4 kg mass and 1 kg mass are moving with equal kinetic energies. The ratio of their moment is

(a) 1 : 2 (b) 1 : 1 (c) 2 : 1 (d) 4 : 1

58. An electricity user pays 1200 rupees electricity bill for every month, on which his electric consumption charge is 900 rupees. If he operates a dual coil electric heater (each of 750 W), a fan of 75 W and 10 W LED lamp, for 1, 12, 10 hours, respectively on regular basis. The amount he pays for each of the consumed unit will be:

(a) 12 (b) 16 (c) 17 (d) 23

59. A block of wood floats in a liquid with four-fifth of its volume submerged. If the relative density of wood is 0.8, the density of liquid is (in kg/m^3):

(a) 1000 (b) 800 (c) 500 (d) 400

60. Which one of the following statements is not correct?

(a) Speed of sound in a medium depends on the temperature of the medium.

(b) A sound of single frequency is called a note.

(c) Sound propagates through a medium at a finite speed.

(d) Sound cannot travel in vcuum.

61. Three resistors of 2Ω ,3Ω and 5Ω. are connected in parallel across a battery of 10 V and of negligible internal resistance. The potential drop across 3Ω resistor is :

(a) 2 V (b) 3 V (c) 5 V (d) 10V

62. Weight of the solid is 80 gms in air and 62 gms in water. Relative density of the solid will be:

(a) 0.22 (b) 0.77 (c) 1.29 (d) 4.44

63. An electric bulb is rated at 200 V- 100 W. Five such bulbs burn for four hours. The cost of the electrical energy consumed, if the rate is 50 paise per unit, will be:

(a) ₹ 0.50 (b) ₹1.00. (c) ₹1.50. (d) ₹ 2.00

64. An object vibrates at 100 Hz. Its time period will be:

(a) 0.01 second. (b) 0.1 second. (c) 10 second (d) 100 second

65. From the law of refraction of light, the refractive index (μ) of a medium is given by:

(a) μ = cot r, if incident light falls normal on surface of given medium

(b) μ=cosec r, if incident light falls normal on the surface of given medium

(c) μ = 0, if angle of incident equal to angle of refraction i.e. $\angle i = \angle r$

(d) μ is independent of incidence angle

66. The refractive index of water is 4/3 and that of glass is 3/2. The refractive index of glass with respect to water is :

(a) 2 (b) 9/8 (c) 8/9 (d) 1/2

67. The electrical resistivity of the material of the conductor depends on:

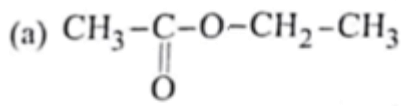
(a) its length. (b) its area of cross section

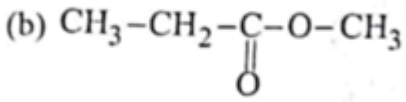
(c) the nature of its material. (d) all the above

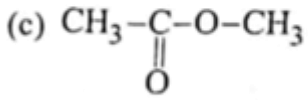
68. Electrovalent compounds are soluble in:

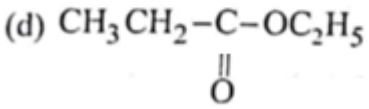
(a) Kerosene (b) Petrol (c) Benzene (d) Water

69. The compound formed by the reaction of ethanol with ethanoic acid in presence of an acid catalyst is:

(a) 

(b) 

(c) 

(d) 

70. Which oxide is more basic in the following?

(a) Na_2O (b) MgO (c) ZnO (d) CuO

71. Which of the following reaction is not correct?

(a) Zn + CuSO4 → ZnSO4 + Cu

(b) 2Ag + $Cu(NO_3)_2$ → $2AgNO_3$ + Cu

(c) Fe + CuSO4 → FeSO4 + Cu

(d) Mg + 2HCl → MgCl2 + H2

72. Mass of one atom is equal to :

(a) 1/16th the mass of O^{16} atom.

(b) 1 /14th the mass of C^{14} atom.

(c) 1/12th the mass of C^{12} atom.

(d) one atom of Hydrogen.

73. What are the number of moles in 12.04 x 10^{23} atoms of Helium ?

(atomic mass = 4)

(a) 1.2044 moles. (b) 0.12 moles. (c) 2.0 moles. (d) All the above

74. The number of molecules of sulphur (S_8) in 16g of solid sulphur are:

(a) 0.062 x 6.023 x 10^{23} molecules

(b) 6.2 x 6.023 × 10^{23} molecules

(c) 0.620 × 6.023 × 10^{23} molecules .

(d) 62 x 6.023 × 10^{23} molecules

75. Which one is the Dobereiner's triads in the periodic table?

(a) F, Cl, I (b) N, P, As (c) Ca, Sr, Ba (d) Na, K, Li

76. Which gas is released when acetic acid reacts with sodium hydrogen carbonate?

(a) Carbon monoxide (b) Hydrogen (c) Carbon dioxide (d) Nitrogen

77. $3MnO_2 + 4Al \rightarrow 2Al_2O_3 + 3Mn + Heat$. The above reaction is not an example of:

(a) redox reaction (b) exothermic reaction

(c) displacement reaction (d) decomposition reaction

78. Number of carbon atoms present in 0.65 mole of C are:

(a) 3.09×10^{23} (b) 3.95×10^{23} (c) 3.91×10^{23} (d) 3.85×10^{23}

79. The solubility of gases in liquids increases with:

(a) Decrease in temperature and increase in pressure

(b) Increase in temperature and decrease in pressure

(c) Decrease in temperature and decrease in pressure

(d) Increase in temperature and increase in pressure

80. Element X forms a chloride with the formula XCl_2, which is a solid with a high melting point. X would most likely be in the same group of the periodic table as:

(a) Na (b) Mg (c) Al (d) Si

81. (i) $2\ ZnS(s) + 3\ O_2(g) \xrightarrow{heat} 2\ ZnO(s) + 2\ SO_2(g)$

(ii) $ZnCO_3(s) \xrightarrow{heat} ZnO(s) + CO_2(g)$

Which statement is true for the above reactions in the following?

(a) Reaction (i) is calcination and (ii) is roasting.

(b) Reaction (i) is roasting and (ii) is calcination.

(c) Both reactions, (i) and (ii) are the example of calcination.

(d) Both reactions, (i) and (ii) are the example of roasting.

82. Which of the following is the most reactive metal ?

(a) Cu (b) Fe (c) Al (d) Zn

83. 5.3 g of sodium carbonate reacts with 6 g of ethanoic acid to give 2.2 g of carbon dioxide, 0.9 g water and 'x' g sodium acetate. According to law of conservation of mass, the value of 'x' shall be:

(a) 8.2 g (b) 8.8 g (c) 11.3 g (d) 14.4 g

84. Which of the following hydrocarbons undergoes addition reaction?

(I) C_2H_2 (II) C_2H_4 (III) C_2H_6. (IV) C_3H_6

Choose the correct option:

(a) only I (b) only I and II (c) only I and III (d) only I, II and IV

85. Which chamber of the heart receives the oxygen-rich blood from the lungs?

(a) Left atrium (b) Left ventricle (c) Right atrium (d) Right ventricle

86. Number of nephrons in each human kidney is:

(a) One thousand (b) One hundred thousand (c) One million (d) Ten million

87. The cuboidal epithelium forms the lining of:

(a) Oesophagus (b) Intestine (c) Skin (d) Kidney tubules

88. The cell organelles containing their own genetic materials are:

(a) Mitochondria and Glyoxysomes (b) Mitochondria and Lysosomes

(c) Mitochondria and Plastids (d) Mitochondria and Golgi apparatus

89. The innermost layer of anther wall is called:

(a) Epidermis (b) Endothecium (c) Endodermis (d) Tapetum

90. Saccharomyces (Yeast) reproduces by:

(a) Fission (b) Budding (c) Fragmentation (d) Sporulation

91. In autotrophic nutrition the substance which is not taken up from outside is:

(a) CO_2 (b) H_2O (c) Light (d) Chlorophyll

92. Nitrogen is an essential element for the synthesis of:

(a) Carbohydrates (b) Protein (c) Fat (d) Oil

93. Breakdown of pyruvate using oxygen takes place in :

(a) Cytoplasm (b) Mitochondria (c) Golgi apparatus (d) Endoplasmic Reticulum

94. Which of the following occupies the lowest level in an energy pyramid?

(a) hawk (b) mouse (c) grass (d) snake

95. All the living organism in an area together with the non-living constituents of the environment forms :

(a) Universe (b) Surroundings (e) Ecosystem (d) Ecotones

96. The phenotypic ratio of Mendel's monohybrid cross between pure tall and dwarf varieties, in F_2 generation is:

(a) 9:1 (b) 3:1 (c) 3:2 (d) 3:9

97. Which one is considered as micronutrient ?

(a) Calcium (b) Molybdenum (c) Magnesium (d) Nitrogen

98. In classification the kingdom Protista include:

(a) Unicellular eukaryotes (b) Unicellular prokaryotes

(c) Multicellular prokaryotes (d) Multicellular eukaryotes

99. Which of the following is not triploblastic animal?

(a) Planaria (b) Euplectella (c) Ascaris (d) Fasciola

100. Specify the water fern which is used as a green manure in rice fields:

(a) Salvinia (b) Mucor (c) Aspergillus (d) Azolla

Answer Key 2023

1.c	2.c	3.a	4.d	5.d	6.b	7.d	8.b	9.a	10.a	11.d	12.c
13.a	14.d	15.a	16.a	17.c	18.c	19.c	20.b	21.c	22.d	23.d	24.b
25.b	26.b	27.d	28.d	29.b	30.d	31.b	32.c	33.a	34.c	35.b	36.a
37.b	38.b	39.d	40.b	41.d	42.b	43.b	44.a	45.b	46.a	47.c	48.a
49.c	50.b	51.a	52.d	53.a	54.a	55.d	56.omitted	57.c	58.a	59.a	60.b
61.d	62.d	63.b	64.a	65.d	66.b	67.c	68.d	69.a	70.a	71.b	72.c
73.c	74.a	75.c	76.c	77.d	78.c	79.a	80.b	81.b	82.c	83.a	84.d
85.a	86.c	87.d	88.c	89.d	90.b	91.d	92.b	93.b	94.c	95.c	96.b
97.b	98.a	99.b	100.d								