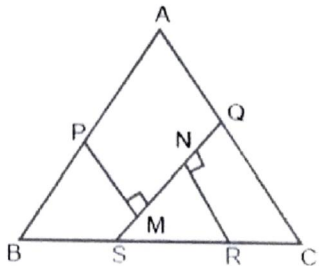
I (HARYANA STATE)
(2020 – 21)
(For Class – X)
SCHOLASTIC APTITUDE TEST

QUESTION PAPER

1. In the figure, in ΔABC, AB = AC = 10 cm and BC = 12 cm. P and Q are the midpoints of AB and AC respectively. PM and RN are perpendiculars on SQ. If BS : SR : RC = 1 : 2 : 1, then the length of MN is:



(1) $\frac{14}{\sqrt{13}}$cm (2) $\sqrt{13}$cm

(3) $\frac{12}{\sqrt{13}}$cm (4) $\frac{10}{\sqrt{13}}$cm

2. Which one is the incorrect statement?
(1) The activities in primary, secondary and tertiary sector are interdependent.
(2) Workers in the tertiary sectors do not produce goods.
(3) Irrigating his field by a farmer is an economy activity.
(4) None of the above.

3. Where was Indian National Congress founded in 1885?
(1) Poona (2) Calcutta
(3) Bombay (4) Sabarmati

4. Choose the hormone which regulates carbohydrate, protein and fat metabolism in the body so as to provide the best balance for growth:
(1) adrenaline (2) insulin
(3) thyroxin (4) oestrogen

5. The first DMU Train of India with solar power coaches was launched in which of the following station?
(1) Gorakhpur Railway Station (2) Safdarjung Railway Station
(3) Delhi Cantonment Railway Station (4) Ambala Cantonment Railway Station

6. Sexual reproduction in human beings involves the introduction of sperms in the vagina of the female after that in which part of the female reproductive systems fertilization takes place.
(1) ovary (2) uterus
(3) cervix (4) fallopian tube

7. In 1928 whose image was used to popularised Baby Products in India?
(1) Sweet little girl (2) Innocent boy
(3) Lord Krishna (4) Balak (Dhruv)

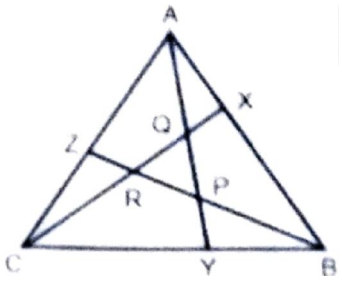
8. The flower which contains both stamens and carpels they are called bisexual flowers which of the following flower pair is bisexual?
(1) papaya, watermelon
(2) hibiscus, mustard
(3) cucumber, maize
(4) muskmelon, pumpkin

9. Two concentric circles with center O, have radii 15 cm and 9 cm. From a point A on the bigger circle tangents AB and AC are drawn to the smaller circle at B and C, respectively, intersecting bigger circles at D and E, respectively, OF $\perp$ DE at F. The length of OF is:
(1) 3.8 cm
(2) 4.2 cm
(3) 4.5 cm
(4) 5.1 cm

10. Where was 'cattle – Plague' spread in 1890?
(1) India
(2) Africa
(3) Europe
(4) China

11. From A. D. 768 to 770 who introduced the hand Printing technology in Japan?
(1) Chinese People
(2) Chinese Government
(3) Christian Missionaries
(4) Buddhist Missionaries

12. In the figure ABC is an equilateral triangle with side 14 cm. $AX = \frac{1}{3}AB$, $BY = \frac{1}{3}BC$ and $CZ = \frac{1}{3}AC$. What is the area (in cm^2) of ΔPQR?



(1) $7\sqrt{3}$
(2) $14\sqrt{3}$
(3) $\frac{28\sqrt{3}}{9}$
(4) $\frac{49\sqrt{3}}{9}$

13. Choose the incorrect statement:
(1) A country which is not Republic is also not democratic.
(2) A state which has elected head is called as republic.
(3) In Britain King / Queen is the head of state.
(4) USA has elected head.

14. Which state has highest national park in India out of the following?
(1) Gujarat
(2) Assam
(3) Madhya Pradesh
(4) Andhra Pradesh

15. Choose correct statement for human:
(1) Arteries always carry oxygenated blood while veins always carry deoxygenated blood.
(2) Arteries are provide with valves while veins are devoid of valves.
(3) Arteries always carry blood away from heart, while veins always carry blood towards the heart.
(4) Venous blood is returned to left auricle.

16. pH of .001 M NaOH will be
(1) .001
(2) 1
(3) 10^{-3}
(4) 11

17. ABEDC is a pentagon such that ABC is an equilateral triangle and BEDC is a square of side 2 cm. A circle passes through its vertices A, E and D. What is the circumference (in cm) of the circle?

(1) $3\sqrt{3}\,\pi$ (2) $4\sqrt{3}\,\pi$

(3) $4\,\pi$ (4) $8\,\pi$

18. Who said state is Association of associations?

(1) Plato (2) M.K. Gandhi

(3) Machiavelli (4) Aristotle

19. The crossing of homozygous tall plant with a dwarf would yield plants in the ratio of:

(1) two tall and two dwarf

(2) one homozygous tall, one homozygous dwarf and two heterozygous tall

(3) all homozygous tall

(4) all homozygous dwarf

20. One mole of SO_2 means

(1) 6.4 g of SO_2 (2) 2.24 L gas at STP

(3) 6.022×10^{23} molecules of SO_2 (4) 64 L of gas

21. Growing two or more crops but indefinite row pattern is known as:

(1) intercropping (2) crop rotation

(3) mixed farming (4) mixed cropping

22. Which of the following hill station is one of the "Eco-Hot Spot" in India?

(1) Drass (Ladakh) (2) Pachmarhi (M.P.)

(3) Palampur (H.P.) (4) Amboli (Maharashtra)

23. Two parallel chords AB and CD in a circle are of lengths 8 cm and 12 cm, respectively and the distance between them is 6 cm. The chord EF, parallel to AB and CD and midway between them is of length $\sqrt{k}$, where k is equal to:

(1) 100 (2) 140

(3) 144 (4) 150

24. Who personified the status of liberty as female figure?

(1) French artists (2) British artists

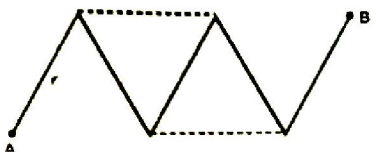
(3) American artists (4) All of the above

25. Which of the following is correctly matched?

(1) Mettur Dam – Krishna River (2) Koyna Dam – Kaveri River

(3) Pravara Dam – Godavari River (4) Narora Dam – Ganges River

26. Five identical resistance wire of 1Ω each, are connected as shown in figure as clear lines. If two similar wires are added as shown by dashed lines, find the change in resistance between A & B:



(1) 2Ω

(2) 1Ω

(3) 3Ω

(4) 4Ω

27. When sound is refracted from air to water, which of the following will remain unchanged?

(1) Frequency (2) Wavelength

(3) Wave number (4) Wave velocity

28. The reaction of burning of carbon in oxygen is represented by equation

$$C(s) + O_2(g) \longrightarrow CO_2(g) + \text{Heat} + \text{Light}$$

When 9.0 g of solid carbon is burnt in 16.0 g of oxygen gas the s of carbon dioxide gas formed would be:
(Note: atomic mass of C = 12.0μ, O = 16.0μ)
(1) 2.33 g (2) 22.0 g
(3) 25.0 g (4) 33.00 g

29. Which one among the following metal is more reactive than hydrogen?
(1) Mercury (2) Copper
(3) Silver (4) Tin

30. Which of the following compound do not contain aldehydic group(–CHO) in them?
A. Formaldehyde B. Propanal
C. Butanol D. Pentane-3-one
E. 3-Methyl hexanal
(1) C & D (2) D & E
(3) A & C (4) B & C

31. Comparing different countries as per Human Development Index, which of the following is/are the basis of ranking:
(i) Literacy rate of people
(ii) Health status of people
(iii) Per capita income
(1) only (i) and (ii) (2) only (iii)
(3) only (i) and (iii) (4) All of the above

32. Match the following column with A and B in a correct manner and answer.

Column – A	**Column – B**
(a) Manchester of India	(i) Information Technology
(b) Sunrise Industry	(ii) Jute
(c) Natural fiber	(iii) Ahmadabad
(d) Silicon valley of India	(iv) Bangalore

(1) a (ii), b (iv), c (i), d (iii) (2) a (iv), b (ii), c (iii), d (i)
(3) a (i), b (iii), c (iv), d (ii) (4) a (iii), b (i), c (ii), d (iv)

33. Electrolysis of sodium chloride produces a gas A when A is passed through solution of compound B another compound C is formed which is used as oxidizing agent in many chemical industries A, B and C will be respectively:
(1) CO_2 NaCl $NaHCO_3$
(2) CO_2 $Ca(COOH)_2$ CaC_2
(3) Cl_2 $Ca(OH)_2$ $CaOCl_2$
(4) Cl_2 Na_2CO_3 NaCl

34. Where was first Printing Press developed in 1430?
(1) England (2) Germany
(3) America (4) France

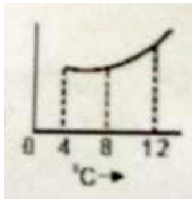
35. An octahedral die whose faces are numbered 1 through 8 (only one number on one face) is thrown three times. What is the probability that the product of the numbers obtained in first two throws is equal to the number obtained in the third throw?
(1) $\frac{9}{216}$ (2) $\frac{3}{128}$
(3) $\frac{3}{64}$ (4) $\frac{5}{128}$

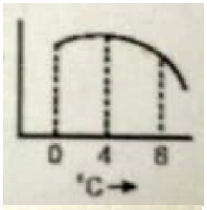
36. On which date Bengal was partitioned by British Government in 1905?
(1) 10 October (2) 12 October
(3) 14 October (4) 16 October

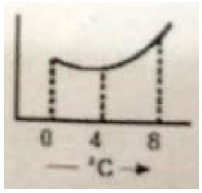
37. Two metal pieces when immersed in liquid experience equal upthrust on them, then
(1) Both pieces must have equal weights (2) Both pieces must have equal densities
(3) Both pieces must have equal volumes (4) Both pieces must are at equal depths.

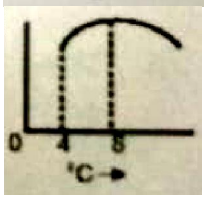
38. In an imaginary economy, the monetary value of contributions of private sector, pubic sector, primary sector, secondary sector and tertiary sector are Rs. 500, Rs. 1,000, Rs. 10,000, Rs. 5000 and Rs. 7,000. The Gross Domestic Product of the economy is:
(1) Rs. 23,500 (2) Rs. 22,000
(3) Rs. 23,000 (4) Rs. 22,500

39. If $\frac{\sqrt{28-10\sqrt{3}}+\sqrt{7+4\sqrt{3}}}{\sqrt{16+6\sqrt{7}}} = a+b\sqrt{7}$, then what is the value of (2a + b)?
(1) 7 (2) 14
(3) $15\frac{1}{2}$ (4) $17\frac{1}{2}$

40. Which of the following curves best represent the variation in density of water with temperature?
(1) 

(2) 

(3) 

(4) 

41. The number of neutrons in $^{27}_{13}Al$ is
(1) 40 (2) 27
(3) 14 (4) 13

42. There are three types of muscle fibres, striated, unstriated and cardiac muscles. Choose the correct statement for unstriated muscles.
(1) cylindrical, unbranched, nonstriated, multinuclear and involuntary
(2) spindle shaped, unbranched, unstriaged, uninucleate and involuntary
(3) spindle shaped, unbranched, nonstriated, multinucleate and involuntary
(4) cylindrical, striated, unbranched, multinucleate and voluntary

43. Who was the author of the famous book “Hind Swaraj”?
(1) Mahatma Gandhi (2) S. C. Bose
(3) Bhagat Singh (4) Sarojni Naidu

44. If $ax^3 + bx + c$ is divisible by $x^2 + dx + 1$, then:
(1) $a^2 + b^2 = ac$ (2) $a^2 - c^2 = ab$
(3) $a^2 - b^2 = ac$ (4) $a^2 + c^2 = ab$

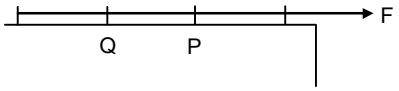
45. Match the items of column- I with column-II and choose the correct option

	Column – I		Column - II
(a)	$4HNO_3 + C \longrightarrow 4NO_2 + CO_2 + 2H_2O$	(i)	Double displacement
(b)	$2KClO_3(s) \xrightarrow[MnO_2]{Heat} 2KCl + 3O_2$	(ii)	Displacement
(c)	$NaCl + AgNO_3 \longrightarrow AgCl + NaNO_3$	(iii)	Oxidation-reduction
(d)	$N_2 + 3H_2 \xrightarrow[410^oC]{Fe} 2NH_3$	(iv)	Decomposition
(e)	$Na + CuSO_4 \longrightarrow Na_2SO_4 + Cu(s)$	(v)	Combination

(1) a – v, b – iii, c – ii, d – i, e – iv
(2) a – iii, b – iv, c – i, d – v, e – ii
(3) a – ii, b – iii, c – iv, d – v, e – i
(4) a – iv, b – iii, c – ii, d – v, e – i

46. Medulla oblongata is a part of hind brain and is located beneath the cerebellum. It controls various functions of body through number of centers. Which function of body is controlled by this?
(1) heart beat
(2) rate of respiration
(3) secretion of saliva
(4) all of the above

47. A force 'F' is applied on one end of a rope of length 'a'. P and Q are two points of length 'b' from nearest end. The ratio of tensions in string at P & Q is

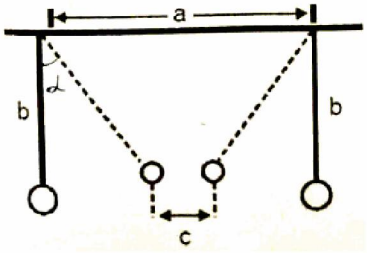


(1) b/(a – b)
(2) (a – b)/b
(3) (a – 2b)/b
(4) b/(a – 2b)

48. Through which one of the following group of Asian Countries does tropic of cancer pass?
(1) India, Saudi Arabia & Sri lanka
(2) India, Bangladesh & Indonesia
(3) Saudi Arabia, United Arab Emirates & Oman
(4) Venezuela, Ethiopia & Indonesia

49. Vinegar is prepared from
(1) Ethanoic acid
(2) Citric acid
(3) Methanoic acid
(4) Butaonic acid

50. Two masses of 'm' each are suspended side by side at distance 'a', by two equal threads of length 'b' If 'α' is the angle that threads make with vertical due to attraction between masses, then α =



(1) $\tan^{-1}\left(\frac{cg}{mG}\right)$
(2) $\tan^{-1}\left(\frac{mG}{c^2g}\right)$
(3) $\tan^{-1}\left(\frac{cg}{m^2G}\right)$
(4) $\tan^{-1}\left(\frac{c^2g}{mG}\right)$

51. If $\sin\theta = \frac{m^2 + 2mn}{m^2 + 2mn + 2n^2}$, then $\frac{1}{\sec\theta - \tan\theta} - \frac{1}{\cos\theta}$ is equal to:

(1) $\frac{m^2 + mn}{n^2 + 2mn}$ (2) $\frac{n^2 + mn}{m^2 + mn}$

(3) $\frac{m^2 + mn}{n^2 + mn}$ (4) $\frac{m^2 + 2mn}{2\left(n^2 + mn\right)}$

52. What is the number of the pairs of positive integers, the difference of whose squares is 45?

(1) 1 (2) 2

(3) 3 (4) 4

53. Shyam has taken a domestic gas connection from IOC but local agency manager insisted him to purchase a gas stove @ Rs. 4,000 from them. Which of the following rights does this practice violate under Consumer Protection Act?

(1) Right to Represent (2) Right to information

(3) Right to choose (4) Right to safety

54. Pandu port is a riverine port developed on the which of the following bank of the river?

(1) Ganga (2) Tapi

(3) Brahmaputra (4) Krishna

55. In which of the following areas Lok Sabha and Rajya Sabha have equal powers?

(1) Legislative (2) Financial

(3) Constitutional Amendment (4) Executive Power

56. Water flows at the rate of 10 m per minute through a cylindrical pipe with internal diameter 2 cm. How long (in minutes) would it take to fill completely a conical vessel whose radius is 50 cm and depth 45 cm?

(1) 35 (2) 37.5

(3) 40 (4) 42.5

57. Which of the following elements form basic oxides?

(a) an element with atomic number 10 (b) an element with atomic number 12

(c) an element with atomic number 16 (d) an element with atomic number 19

(1) a and c (2) b and c

(3) c and d (4) b and d

58. Which of the following is true about the two statements?

Statement- I: Ordinarily H_2S is a gas and H_2O is liquid

Statement- II: Sulphur is more electronegative so that is form hydrogen bond.

(1) I is correct but II is incorrect

(2) I is incorrect but II is correct

(3) Both statements are correct and II is also correct explanation of I

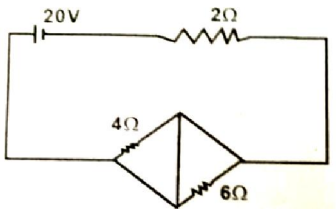
(4) Both are correct but II is not correct explanation of I

59. Which is the other name of Sahyadri Range?

(1) Western Ghats (2) Teaser Himalayas

(3) Shivalik (4) Arakanyoma Mountain

60. In the circuit shown:
(1) Current flowing from battry is 5A.
(2) Power supplied by battery is 200 W.
(3) Potential difference across 4Ω is equal to the potential difference across 6 Ω.
(4) Both (2) and (3)

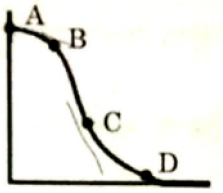


61. Plants absorb water through its roots, stems and leaves. But, mainly water is absorbed by root hairs. These hair roots absorb water, when:
(1) plants respire rapidly
(2) soil solution is isotonic
(3) salt concentration of soil is high
(4) salt concentration of cell sap is high

62. The value of $\frac{(\sec\theta+\tan\theta)(1-\sin\theta)\sec\theta}{(1+\tan\theta+\sec\theta)(1+\cot\theta-\operatorname{cosec}\theta)}$ lies between:
(1) 0.2 and 0.4
(2) 0.4 and 0.6
(3) 0.6 and 0.8
(4) 0.8 and 1

63. Who founded the Swaraj Party within the congress?
(1) S.C. Bose and Pt. J.L. Nehru
(2) Mahatma Gandhi and S.C. Bose
(3) Pt. J.L. Nehru and Moti Lal Nehru
(4) C.R. Das and Moti Lal Nehru

64. The variation in momentum with time, for a body under collision is shown in figure. The maximum & minimum instantaneous forces are respectively on these points:
(1) B, C
(2) C, A
(3) D, A
(4) A, D



65. If $x^2 - 3x + 1 = 0$, then what is the value of $(x^5 + x^{-5})$?
(1) 119
(2) 122
(3) 123
(4) 125

66. Match the following Iron ore and minerals areas in India with the correct states.

(a) Karnataka	(i) West Singhbhum
(b) Odisha	(ii) Kudiremukh
(c) Jharkhand	(iii) Bailadaila
(d) Chattisgarh	(iv) Cuttuck

(1) a (ii), b (iv), c (i), d (iii)
(2) a (i), b (iii), c (ii), d (iv)
(3) a (iii), b (ii), c (iv), d (i)
(4) a (iv), b (i), c (iii), d (ii)

67. If there are two economy having same per capital income of $50000, then can we state that :
(i Income distribution in both countries should be equal
(ii) One might have equitable distribution of income while other might have great disparities between rich and poor.
(1) only (i)
(2) only (ii)
(3) both (i) and (ii)
(4) none

68. If the radius of a cylinder is increased by 12 cm, its volume increases by x cm^3. If its height is increased by 12 cm, then its volume is also increased by x cm^3. If the original height is 4 cm, then its original curved surface area (in cm^2) is:
(1) 48 π
(2) 72 π
(3) 96 π
(4) 108 π

69. In which of the following groups would you place a plant that produces spores and embryos but lacks seeds and vascular tissue?
(1) pteridophytes (2) bryophytes
(3) gymnosperms (4) thallophyta

70. In 1772 who remarked that demand for Indian textiles could never reduce in?
(1) Henry Patallo (2) Henry Smith
(3) Henry George (4) Henry Joseph

71. Choose the group of two states having coalition government:
(a) Orissa
(b) Haryana
(c) Maharashtra
(d) M.P.
(1) a, c (2) b, d
(3) b, c (4) c, d

72. Development and formation of pollen grains in anther of the stamen is known as:
(1) microsporogenesis (2) fertilization
(3) megasporogenesis (4) spermiogenesis

73. Which of the following is **not** a pollutant?
(1) SO_2 (2) CO_2
(3) CO (4) NO_2

74. Which is not the aim of liberalization and globalization?
(1) More production at all levels
(2) Increase in the trade of goods and services
(3) Generation of more employment opportunities
(4) Increase the subsidies to the poor and deprived section of the society

75. The deepest landlocked port in India is:
(1) Paradip Port (2) Madras Port
(3) Calcutta Port (4) Visakhapatnam Port

76. Which two of the following statements are true?
(i) India is Unitary state
(ii) India is federal State
(iii) India is union of states
(iv) India is federal state unitary federal
(1) i, iv (2) iii, iv
(3) ii, i (4) I, iii

77. Which of the following reflects situation where a person is employed but do not contribute in adding to the total product?
(1) Open unemployment (2) Disguished unemployment
(3) Season unemployment (4) Frictional unemployment

78. A person decides to live exclusively on a diet of milk, egg and bread. He would suffer from:
(1) scurvy (2) beri-beri
(3) night blindness (4) rickets

79. The efforts made to increase farm production in order to meet the growing demand of increasing population is called:
(1) Agricultural Quotient (2) Agricultural Degeneration
(3) Agricultural Development (4) Agricultural Index

80. Who decides the nature of bill in Lok Sabha?
(1) Prime Minister
(2) Leader of Opposition
(3) Speaker of Lok Sabha
(4) General Secretary of Lok Sabha

81. Two bodies of masses m_a & m_b ($m_a > m_b$) are dropped from heights 'a' & 'b' respectively. The ratio of velocities with which they reach ground is:
(1) $\frac{m_a}{m_b}$ (2) $\frac{a}{b}$ (3) $\sqrt{\left(\frac{am_a}{bm_b}\right)}$ (4) $\sqrt{\left(\frac{a}{b}\right)}$

82. If $\sqrt{x^2+\sqrt[3]{x^4y^2}}+\sqrt{y^2+\sqrt[3]{x^2y^4}}=k$, then which of the following is true?
(1) $x^2 + y^2 = k^2$
(2) $x^{3/2} + y^{3/2} = k^{3/2}$
(3) $x^{2/3} + y^{2/3} = k^{2/3}$
(4) $x^{1/3} + y^{1/3} = k^{1/3}$

83. What is the other name for civil code of 1804 in France?
(1) French code of law
(2) People's code of law
(3) Napoleonic code
(4) Code of law

84. Two pendulums of lengths 1 m and 25 m are given a small displacement at same instant in same direction. After how many oscillations of smaller pendulum, both will be in same phase?
(1) $\frac{5}{4}$ (2) $\frac{4}{5}$ (3) $\frac{3}{5}$ (4) $\frac{5}{3}$

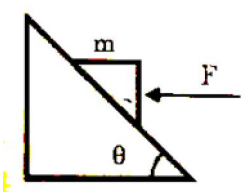
85. An element X (atomic number 20) reacts with another element Y (atomic number 17) form a compound Z. Which of the following statement are true regarding this compound?
I. Molecular formula of Z is XY_2
II. X and Y are joined by sharing of electrons
III. Z imparts characteristic flame colour
IV. It is soluble in water
(1) II & III
(2) I, III & IV
(3) II, III & IV
(4) I, II & III

86. In an arithmetic progression, the sum of its fourth, seventh and tenth terms is 17 and the sum of its first 14 terms excluding first three terms is 77. If its kth terms is 13, then the value of k is:
(1) 16
(2) 17
(3) 18
(4) 20

87. ABCD is a trapezium in which AB || DC, AB = 50 cm, BC = 20 cm, AD = 15 cm and the difference (in cm) between DC and AB is a whole number. The area of the trapezium is:
(1) 625 cm^2
(2) 650 cm^2
(3) 750 cm^2
(4) 780 cm^2

88. Which Agency of UN got Nobel Prize for peace of 2020?
(1) UNICEF
(2) WHO
(3) WFP
(4) UNESCO

89. A horizontal force 'F' is applied to keep the block stationary on a frictionless inclined plane. Find the angle of incline, for which the applied force is equal to the weight of body:
(1) A and B
(2) B and C
(3) A and C
(4) Option (1), (2) & (3) are correct.



90. In which of the following states India's first textile University will be set up?
(1) Maharashtra (2) Gujarat
(3) Madhya Pradesh (4) Uttar Pradesh

91. Which country has the tradition which once a speaker, always a speaker?
(1) USA (2) France
(3) China (D) U.K.

92. There are two spheres of same material and radius. One is solid and other is hollow. If they are heated to same temperature the expansion of:
(1) Solid sphere is more (2) Hollow sphere is more
(3) Solid & hollow spheres are equal (4) Solid is outwards while hollow is inwards.

93. The metal atom which is present in superphosphate is
(1) Sodium(Na) (2) Potassium(K)
(3) Calcium(Ca) (4) Magnesium(Mg)

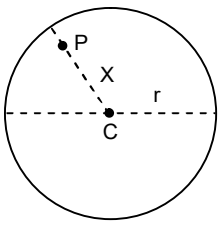
94. The mean of three numbers is 11 more than the least of the given numbers and 15 less than the greatest number among them. If the median of the three numbers is 10, then their sum is:
(1) 42 (2) 44
(3) 45 (4) 48

95. What is the main theme of the book "Istri Dharm Vichar" written by Ram Chaddha?
(1) To teach women how to react against industice
(2) To teach women how to behave in the family
(3) To teach women how to complete with the western world
(4) To teach women how to be obedient wives

96. AB is a line segment with A = (–2, 3) and B = (5, 5). It is reflected in the x-axis. Then, its image is reflected in the y-axis. What is the sum of the coordinates of the midpoint of the final image?
(1) 5 (2) $5\frac{1}{2}$
(3) $-5\frac{1}{2}$ (4) -5

97. In human beings, excretory products are removed by excretory system. Which part of the excretory system help in removing nitrogenous waste such as urea or uric acid from blood?
(1) Ureter (2) Urethra
(3) Kidney (4) Urinary bladder

98. The force between a hollow sphere of mass M and a point mass 'm' at P inside it (Shown in figure): (PC = X, Radius = r)
(1) $\frac{GMm}{X^2}$, attractive
(2) $\frac{GMm}{(r-X)^2}$, attractive
(3) $\frac{GMm}{(r-X)^2}$, Repulsive
(4) Zero



99. The area (in square units) of the region bounded by the graphs of $|x| + y = 4$ and $x + 5y = -4$ lies between:

(1) 14 and 17 (2) 17 and 21

(3) 21 and 25 (4) 25 and 29

100. Mr. Anil lives in village and is engaged in agriculture occupation. He needs some money and takes loan of Rs. 1,00,000 from co-operative bank situated in his village. He also borrows Rs. 50,000 from money lender of the village and Rs. 25,000 from his friend. In this situation, what is the ratio of his loan from formal and informal sector?

(1) 4 : 3 (2) 1 : 2

(C) 1 : 5 (4) 3 : 4

(2020 – 21)
(For Class – X)
SCHOLASTIC APTITUDE TEST
ANSWER KEYS

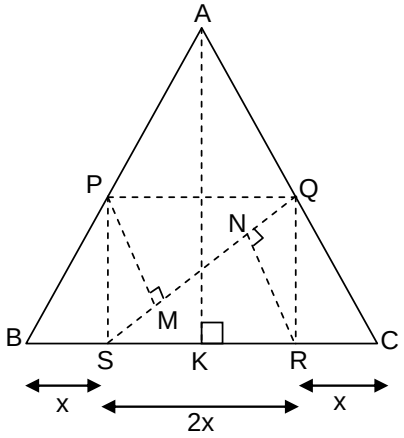
1.	4	2.	4	3.	1	4.	3
5	2	6.	4	7.	3	8.	2
9.	2	10.	2	11.	4	12.	1
13.	1	14.	3	15.	3	16.	4
17.	3	18.	3	19.	2	20.	3
21.	4	22.	4	23.	2	24.	1
25.	4	26.	1	27.	1	28.	2
29.	4	30.	1	31.	4	32.	4
33.	3	34.	2	35.	4	36.	4
37.	3	38.	2	39.	4	40.	2
41.	3	42.	2	43.	1	44.	2
45.	2	46.	4	47.	2	48.	3
49.	1	50.	2	51.	4	52.	3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

NTSE STAGE – I (HARYANA STATE)
(2020 – 21)
(For Class – X)
SCHOLASTIC APTITUDE TEST

HINTS & SOLUTIONS

1. 4

Sol.



AB = 10

AC = 10

P, Q are mid points of AB & AC

$\Rightarrow$ AP = PB = 5

AQ = QC = 5

BC = 12

$\therefore$ x + 2x + x = 12 $\Rightarrow$ x = 3

$\therefore$ BS = 3, SR = 6, RC = 3

$\because$ ΔABC is isosceles

AK $\perp$ BC and BK = KC

$\therefore$ BS = SK = KR = RC = 3

$\because$ PQ || BC

Δ ABK $\rightarrow \frac{BS}{SK} = \frac{BP}{PA} \Rightarrow$ SP || AK $\Rightarrow \Delta PSB \sim \Delta AKB$

$\therefore$ PS $\perp$ BC and $\frac{PS}{AK} = \frac{1}{2}$

$PS = \frac{1}{2} AK$

Similarly, QR $\perp$ BC

$\Delta ACK \rightarrow AK = \sqrt{10^2 - 6^2} = 8$

$\because PS = \frac{1}{2} AK \Rightarrow PS = 4$

and similarly QR = 4

Now in $\Delta QRS \rightarrow \angle QRS = 90°$

$\Rightarrow SQ = \sqrt{SR^2 + RQ^2} = \sqrt{6^2 + 4^2} = 2\sqrt{13}$

 PQRS will be a rectangle

[PQRS] = 6 × 4 = 24

$\therefore$ [PQS] = [SRQ] = 12

Now $[PSQ] = \frac{1}{2} \times SQ \times PM = 12$

$\frac{1}{2} \times 2\sqrt{13} \times PM = 12$

$PM = \frac{12}{\sqrt{13}}$

Similarly, $RN = \frac{12}{\sqrt{13}}$

Now, In right angle triangle ΔPSM

$SM = \sqrt{PS^2 - PM^2} = \sqrt{4^2 - \left(\frac{12}{\sqrt{13}}\right)^2} = \frac{8}{\sqrt{13}}$

Similarly, $QN = \frac{8}{\sqrt{13}}$

Now, MN = SQ – SM – QN

$= 2\sqrt{13} - \frac{8}{\sqrt{13}} - \frac{8}{\sqrt{13}} = \frac{26-16}{\sqrt{13}} = \frac{10}{\sqrt{13}}$

4. 3

Sol. Thyroxin regulates carbohydrate, protein and fat metabolism in the body so as to provide the best balance for growth.

6. 4

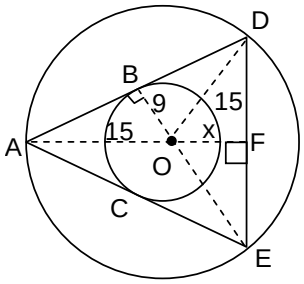
Sol. Fertilisation takes place in fallopian tube.

8. 2

Sol. Hibiscus and mustard are bisexual flowers.

9. 2

Sol.



$AB = \sqrt{15^2 - 9^2} = 12 \text{ cm} = BD = AC = CE$

Let OF = x cm then $DE = 2\sqrt{225 - x^2}$

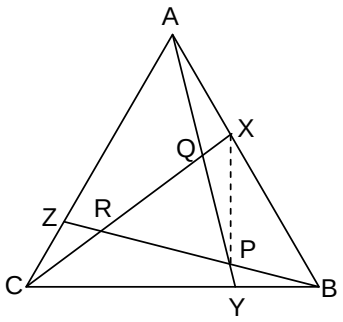
Using $R = \frac{abc}{4\Delta}$

$15 = \frac{24 \times 24 \times 2\sqrt{225 - x^2}}{4 \times \frac{1}{2} \times (15 + x)\left(2\sqrt{225 - x^2}\right)}$

$\Rightarrow x = 4.2$ cm

12. 1

Sol.



By using Menalau's theorem

CR : RQ : QX = BP : PR : RZ = AQ : QP : PY = 3 : 3 : 1

Now, AX : XB = 1 : 2

$\Rightarrow [BXC] = \frac{2}{3}[ABC]$

CR : RX = 3 : 4

$\Rightarrow [BRX] = \frac{4}{7}[BXC] = \frac{8}{21}[ABC]$

Join P to X, Since RP : PB = 1:1

$\Rightarrow [XPR] = \frac{1}{2}[BRX] = \frac{4}{21}[ABC]$

RQ : QX = 3 : 1

$\Rightarrow [PQR] = \frac{3}{4}[XPR] = \frac{1}{7}[ABC]$

$\Rightarrow \text{ar}(PQR) = \frac{1}{7} \times \frac{\sqrt{3}}{4} \times 14 \times 14 = 7\sqrt{3}$ cm^2

15. 3

Sol. Arteries always carry blood away from heart, while veins always carry blood towards the heart.

16. 4

Sol. 0.001 M NaOH $\Rightarrow [OH^-] = 10^{-3}$ M

$\Rightarrow$ pOH = 3, so pH = 11

17. 3

Sol. Draw AQ $\perp$ ED

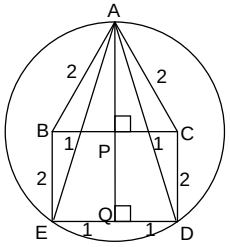
Then EQ = QD = 1 cm

Also, BP = PC = 1 cm

Join A to D and E

Now $AP = \sqrt{3}$ cm, $PQ = 2$ cm

$\Rightarrow AQ = \left(\sqrt{3} + 2\right)$cm



By Pythagoras theorem $AD = AE = \sqrt{\left(\sqrt{3}+2\right)^2 + 1}$

Now, given circle is circumcircle of ΔAED

$\Rightarrow \text{Radius} = \frac{(AE)(ED)(AD)}{4 \times \text{ar}(AED)}$

$= \frac{\left[\left(\sqrt{3}+2\right)^2 + 1\right](2)}{4 \times \frac{1}{2} \times 2 \times \left(\sqrt{3}+2\right)} = 2$ cm

Circumference = 4π cm

19. 2

Sol. Tall dwarf

TT **tt**

↓

Tt × Tt **F_1 generation**

↓

	T	t
T	TT	Tt
t	Tt	tt

Homozygous tall – 1
Heterozygous tall – 2
Homozygous dwarf – 1

20. 3

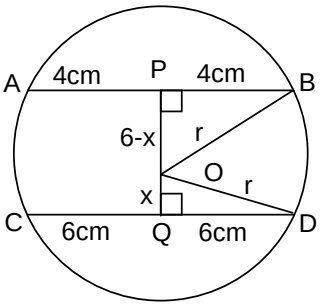
Sol. One mole SO_2 means 64 g of it = 6.022×10^{23} molecules.

21. 4

Sol. Growing two or more crops but indefinite row pattern is known as mixed cropping.

23. 2

Sol.



Let radius of circle = r cm
and OQ = x cm then OP = (6 – x) cm
By Pythagoras theorem,
$r^2 = x^2 + 36$ and $r^2 = 16 + (6 - x)^2$
on solving both equations we get,

$$x = \frac{4}{3} \text{ and } r^2 = \frac{340}{9}$$

Distance of chord EF from centre $= 3 - \frac{4}{3} = \frac{5}{3}$ cm

So, length of chord EF

$$= 2\sqrt{r^2 - \left(\frac{5}{3}\right)^2}$$

$$= 2\sqrt{\frac{340}{9} - \frac{25}{9}} = 2\sqrt{35}$$

$$= \sqrt{140} \Rightarrow K = 140$$

26. 1

Sol. Case-I:

All resistance are in series

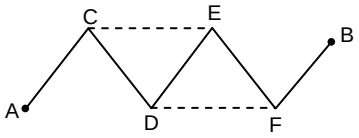
$R_1 = 5R = 5\Omega$

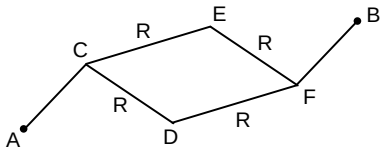
Case-II:

C & F balanced wheat stone bridge is formed.

$R_2 = 3R = 3\Omega$

Charge in resistance = 5 – 3 = 2Ω.





27. 1

Sol. When sound changes its medium frequency remains same since frequency depends on source.

28. 2

Sol. $C(s) + O_2(g) \longrightarrow CO_2(g) + \text{Heat} + \text{Light}$

$1\text{mol} + 1\text{mol} \longrightarrow 1\text{mol}$

Given C = 9 g

$= \frac{9}{12} = \frac{3}{4}\text{mol} = 0.75 \text{ mol}$

O_2 = 16 g

$= \frac{16}{32} = \frac{1}{2}$ mol = 0.50 mol

So CO_2 formed is 0.5 mol = 0.5 × 44 g = 22 g

29. 4

Sol. Tin is more reactive than hydrogen.

30. 1

Sol. A. Formaldehyde is H – CHO

B. Propanal is $CH_3 - CH_2 - CHO$

C. Butanol is $CH_3 - CH_2 - CH_2 - CH_2 - OH$

D. Pentane-3-one is $CH_3 - CH_2 - \overset{\overset{O}{\|}}{C} - CH_2 - CH_3$

E. 3-Methyl hexanal is $CH_3 - CH_2 - CH_2 - \overset{\overset{CH_3}{|}}{CH} - CH_2 - CHO$

33. 3

Sol. $NaCl \xrightarrow{\text{electrolysis}} \underset{(A)}{Na(s) + Cl_2(g)}$

$Cl_2(A) + B(\text{soln}) \longrightarrow C$

$\underset{A}{Cl_2} + \underset{B}{Ca(OH)_2} \longrightarrow \underset{C}{CaOCl_2} + H_2O$

35. 4

Sol. Total possible outcomes = 8 × 8 × 8 = 512

Favourable outcomes

= {(1, 1, 1), (1, 2, 2), (2, 1, 2), (1, 3, 3), (3, 1, 3), (1, 4, 4), (4, 1, 4), (2, 2, 4), (1, 5, 5), (5, 1, 5), (1, 6, 6), (6, 1, 6), (2, 3, 6), (3, 2, 6), (1, 7, 7), (7, 1, 7), (8, 1, 8), (1, 8, 8), (2, 4, 8), (4, 2, 8) }

= 20

Required Probability $= \frac{20}{512} = \frac{5}{128}$

37. 3

Sol. $B_1 = B_2$

$v_1 dg = v_2 dg$

$\Rightarrow v_1 = v_2$

where v_1 & v_2 are volume

39. 4

Sol. $$\frac{\sqrt{28-10\sqrt{3}}+\sqrt{7+4\sqrt{3}}}{\sqrt{16+6\sqrt{7}}} = a+b\sqrt{7}$$

$$\Rightarrow \frac{\sqrt{\left(5-\sqrt{3}\right)^2}+\sqrt{\left(2+\sqrt{3}\right)^2}}{\sqrt{\left(3+\sqrt{7}\right)^2}} = a+b\sqrt{7}$$

$$\Rightarrow \frac{5-\sqrt{3}+2+\sqrt{3}}{3+\sqrt{7}} = a+b\sqrt{7}$$

$$\Rightarrow \frac{7}{3+\sqrt{7}} \times \frac{\left(3-\sqrt{7}\right)}{\left(3-\sqrt{7}\right)} = a+b\sqrt{7}$$

$$\Rightarrow \frac{7}{2}\left(3-\sqrt{7}\right) = a+b\sqrt{7}$$

$$\Rightarrow \frac{21}{2}-\frac{7\sqrt{7}}{2} = a+b\sqrt{7}$$

$$\Rightarrow a = \frac{21}{2}, b = \frac{-7}{2} \therefore 2a+b = 21-\frac{7}{2} = 17\frac{1}{2}$$

40. 2

Sol. From 0° to 4° density increases and when temperature is increased beyond 4° density decreases.

41. 3

Sol. Number of neutrons = 27 – 13 = 14

42. 2

Sol. Involuntary, unstriated, spindle shaped, smooth, uninucleated.

44. 2

Sol.

$$\begin{array}{r|l} & ax - ad \\ \hline x^2 + dx + 1 & ax^3 + bx + c \\ & ax^3 + adx^2 + ax \\ & - \quad - \quad - \\ \hline & -adx^2 - ax + bx + c \\ & -adx^2 - ad^2x - ad \\ & + \quad + \quad + \\ \hline & (ad^2 - a + b)x + (c + ad) \end{array}$$

$\because$ $ax^3 + bx + c$ is divisible by $x^2 + dx + 1$
$\therefore$ remainder should be zero
$\therefore$ $(ad^2 - a + b)x + (c + ad) = 0 \times x + 0$
$\Rightarrow ad^2 - a + b = 0$ …(i)
and $c + ad = 0 \Rightarrow d = -c/a$
by equation (i)

$$a\left(\frac{-c}{a}\right)^2 - a + b = 0$$

$$\frac{c^2}{a} - a + b = 0$$

$$\Rightarrow c^2 - a^2 + ab = 0$$

$\Rightarrow a^2 - c^2 = ab$

45. 2

Sol. $4HNO_3 + C \longrightarrow 4NO_2 + CO_2 + 2H_2O \rightarrow$ Oxidation-reduction

$2KClO_3(s) \xrightarrow[MnO_2]{Heat} 2KCl + 3O_2 \rightarrow$ Decomposition

$NaCl + AgNO_3 \longrightarrow AgCl + NaNO_3 \rightarrow$ Double displacement

$N_2 + 3H_2 \xrightarrow[410^oC]{Fe} 2NH_3 \rightarrow$ Combination

$Na + CuSO_4 \longrightarrow Na_2SO_4 + Cu(s) \rightarrow$ Displacement

46. 4

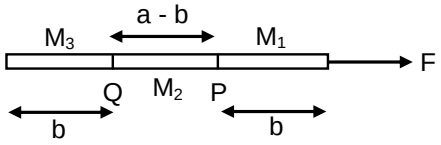
Sol. The function of body controlled by medulla oblongata is heart beat, rate of respiration, and secretion of saliva.

47. 2

Sol. $T_Q = M_3A$

$T_P = (m_2 + m_3)\, A$

$$\frac{T_P}{T_Q} = \frac{m_2 + m_3}{m_3} = \frac{a - b}{b}$$



49. 1

Sol. 5 to 8% ethanoic acid is present in vinegar

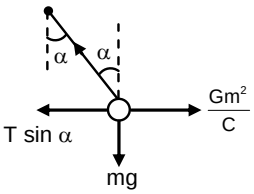
50. 2

Sol. $T \sin\alpha = \frac{Gm^2}{C}$

$T \cos\alpha = mg$

$\tan\alpha = \frac{mG}{c^2 g}$

$\Rightarrow \quad \alpha = \tan^{-1}\left(\frac{mG}{C^2 g}\right)$



51. 4

Sol. $\sin\theta = \frac{m^2 + 2mn}{m^2 + 2mn + 2n^2} \Rightarrow \text{cosec}\,\theta = \frac{m^2 + 2mn + 2n^2}{m^2 + 2mn}$

$$\cot\theta = \sqrt{\text{cosec}^2\theta - 1} = \sqrt{\left(\frac{m^2 + 2mn + 2n^2}{m^2 + 2mn}\right)^2 - 1}$$

$$= \frac{2(m+n)n}{m^2+2mn} = \frac{2\left(mn+n^2\right)}{m^2+2mn}$$

Now, $\frac{1}{\sec\theta-\tan\theta} - \frac{1}{\cos\theta} = \frac{\sec^2\theta-\tan^2\theta}{\sec\theta-\tan\theta} - \sec\theta$

$$= \tan\theta = \frac{m^2+2mn}{2\left(mn+n^2\right)}$$

52. 3

Sol. $x^2 - y^2 = 45$, x and y are positive integer

$\Rightarrow (x - y)(x + y) = 45$

Different possibilities are

$x + y = 45, x - y = 1 \Rightarrow x = 23, y = 22$

$x + y = 15, x - y = 3 \Rightarrow x = 9, y = 6$

$x + y = 9, x - y = 5 \Rightarrow x = 7, y = 2$

So, 3 pairs are possible.

56. 2

Sol. Time to fill vessel

$$= \frac{\frac{1}{3}\times\pi\times50\times50\times45}{\pi\times1\times1\times1000}\text{minutes}$$

= 37.5 minutes

57. 4

Sol. Elements of s-block forms basic oxides

'Mg' with atomic number 12 and

'K' with atomic number 19 will form basic oxides

58. 1

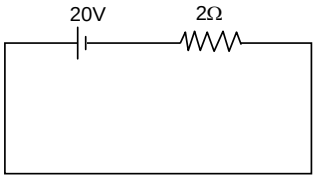
Sol. Oxygen is more electronegative so form H-Bonding.

60. 4

Sol. $i = \frac{V}{R}$ = 10 A

P = VI = 20 × 10

= 200 W



(4Ω & 6Ω are short circuited)

61. 4

Sol. The root hairs absorb water, when salt concentration of cell sap is high.

62. 2

Sol. $$\frac{(\sec\theta+\tan\theta)(1-\sin\theta)\sec\theta}{(1+\tan\theta+\sec\theta)(1+\cot\theta-\operatorname{cosec}\theta)}$$

$$= \frac{\left(\frac{1+\sin\theta}{\cos\theta}\right)\left(\frac{1-\sin\theta}{\cos\theta}\right)}{1+\cot\theta-\operatorname{cosec}\theta+\tan\theta+1-\tan\theta\operatorname{cosec}\theta} + \sec\theta+\sec\theta\cot\theta+\sec\theta\operatorname{cosec}\theta$$

$$= \frac{1}{1+\frac{\cos\theta}{\sin\theta}-\frac{1}{\sin\theta}+\frac{\sin\theta}{\cos\theta}+1-\frac{1}{\cos\theta}+\frac{1}{\cos\theta}+\frac{1}{\sin\theta}-\frac{1}{\sin\theta\cos\theta}}$$

$$= \frac{1}{2} = 0.5$$

Which lies between 0.4 and 0.6

64. 2

Sol. Slope of momentum time graph gives force.
Slope at A is minimum while slope at C is maximum.

65. 3

Sol. $x^2 - 3x + 1 = 0$

$$\Rightarrow x + \frac{1}{x} = 3 \qquad \ldots(i)$$

Squaring

$$x^2 + \frac{1}{x^2} + 2 = 9 \Rightarrow x^2 + \frac{1}{x^2} = 7 \qquad \ldots(ii)$$

Now cubing equation (i)

$$x^3 + \frac{1}{x^3} + 3\left(x + \frac{1}{x}\right) = 27$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3 \times 3 = 27 \Rightarrow x^3 + \frac{1}{x^3} = 18 \qquad \ldots(iii)$$

Now (ii) × (iii)

$$\Rightarrow \left(x^2 + \frac{1}{x^2}\right)\left(x^3 + \frac{1}{x^3}\right) = 18 \times 7$$

$$\Rightarrow x^5 + \left(x + \frac{1}{x}\right) + \frac{1}{x^5} = 126 \Rightarrow x^5 + \frac{1}{x^5} = 126 - 3 = 123$$

68. 3

Sol. Height = 4 cm, Radius = r cm

Case – I

$\pi(r + 12)^2 (4) - x = 4\pi r^2$ …(i)

Case – II

$\pi(r)^2 (16) - x = 4\pi r^2$ …(ii)

From equation (i) and (ii)

r = 12 cm

So, CSA = 96 π cm^2

69. 2

Sol. A plant that produces spores and embryos but lacks seeds and vascular tissues belongs to bryophytes.

72. 1

Sol. Development and formation of pollen grains in anther of the stamen is known as microsporogenesis.

73. 2

Sol. Carbon dioxide is not a pollutant by its nature.

78. 1

Sol. A person decides to live exclusively on a diet of milk, egg and bread. He would suffer from scurvy as vitamin C is not included in his diet.

81. 4

Sol. $V^2 = V^2 + 2gh$

$V = \sqrt{2gh}$

$\frac{V_a}{V_b} = \sqrt{\frac{a}{b}}$

82. 3

Sol. Given: $\sqrt{x^2 + x^{4/3}y^{2/3}} + \sqrt{y^2 + x^{2/3}y^{4/3}} = K$

$\Rightarrow \sqrt{x^{4/3}\left(x^{2/3} + y^{2/3}\right)} + \sqrt{y^{4/3}\left(y^{2/3} + x^{2/3}\right)} = K$

$\Rightarrow \sqrt{\left(x^{2/3} + y^{2/3}\right)}\left[\sqrt{x^{4/3}} + \sqrt{y^{4/3}}\right] = K$

$\Rightarrow \left(x^{2/3} + y^{2/3}\right)^{3/2} = K$

$\Rightarrow x^{2/3} + y^{2/3} = K^{2/3}$

84. 1

Sol. $T = 2\pi\sqrt{\frac{\ell}{g}}$

$\frac{T_{smaller}}{T_{longer}} = \frac{1}{5}$

So they will repeat after $\frac{5}{4}$ oscillations.

85. 2

Sol. $_{20}X^{2} + {}_{17}Y^{1} \longrightarrow Z$

$\Rightarrow$ Z is XY_2 ($CaCl_2$)

86. 3

Sol. $a_4 + a_7 + a_{10} = 17$

$(a + 3d) + (a + 6d) + (a + 9d) = 17$

$\Rightarrow 3a + 18d = 17$

$\Rightarrow a + 6d = \frac{17}{3}$ …(i)

and $(a_1 + a_2 + ... + a_{14}) - (a_1 + a_2 + a_3) = 77$

$\Rightarrow (a + a + d + a + 2d + ... + a + 13d) - (a + a + d + a + 2d) = 77$

$\Rightarrow 14a + d\,(1 + 2 + ... + 13) - (3a + 3d) = 77$

$\Rightarrow 14a + d \times \frac{13 \times 14}{2} - 3a - 3d = 77$

$\Rightarrow 14a + 91d - 3a - 3d = 77$

$\Rightarrow 11a + 88d = 77$

$\Rightarrow a + 8d = 7$ …(ii)

(ii) – (i)

$\Rightarrow 2d = 7 - \frac{17}{3} = \frac{4}{3} \Rightarrow d = \frac{2}{3}$

$\because a + 6d = \frac{17}{3}$

$\Rightarrow a + 6\left(\frac{2}{3}\right) = \frac{17}{3}$

$a = \frac{5}{3}$

Now, $T_k = 13$

$\therefore$ a + (k – 1)d = 13

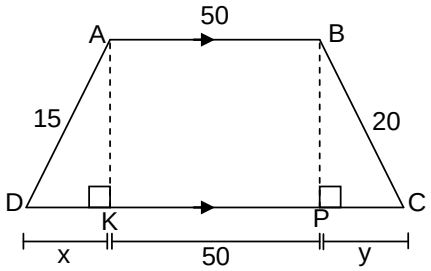
$\frac{5}{3} + (k-1)\frac{2}{3} = 13$

$1 + \frac{2k}{3} = 13$

$\Rightarrow \frac{2k}{3} = 12 \Rightarrow k = 18$

87. 3

Sol.



$\because$ AK = BP (AB || DC)

$\Rightarrow AK^2 = BP^2$

$\Rightarrow 15 - x^2 = 20^2 - y^2$

$\Rightarrow y^2 - x^2 = 20^2 - 15^2 = 35 \times 5$

$\Rightarrow (y + x)(y - x) = 35 \times 5$

Case – I

$(y + x)(y - x) = 35 \times 5$

$y + x = 35, y - x = 5$

$\Rightarrow 2y = 40 \Rightarrow y = 20$ and $x = 15$

Case – II

$(y + x)(y - x) = 35 \times 5 = 7 \times 5 \times 5$

$(y + x)(y - x) = 25 \times 7$

$\Rightarrow y + x = 25, y - x = 7$

$\Rightarrow y = 16, x = 9$

At x = 9

$AK = \sqrt{15^2 - 9^2} = 12$

and at x = 15, AK will be zero

Hence only case – II is acceptable.

$\therefore$ Height AK = 12

Now area $= \frac{1}{2} \times$ sum of parallel sides $\times$ height

$= \frac{1}{2} \times (100 + x + y) \times 12$

$= \frac{1}{2} \times (100 + 16 + 9) \times 12$

$= 125 \times 6 = 750\ cm^2$

89. 2

Sol. FBD of block

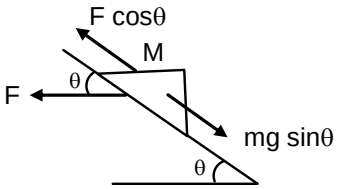
given F = mg

Since block is at rest wrt incline

F cos θ = mg sin θ

mg cos θ = mg sin θ

$\Rightarrow \quad \theta = 45°$



92. 3

Sol. $\Delta V = V\gamma\Delta T$

or $\Delta V \propto \Delta T$

Q Material and temperature difference are same for both spheres.

So expansion are equal.

93. 3

Sol. The metal atom which is present in superphosphate is Calcium(Ca).

94. 1

Sol. Let say these numbers are such that x < y < z.

ATQ,

$$\text{Mean} = \frac{x+y+z}{3} = x+11 = z-15$$

and given median = 10

Hence y = 10

$$\therefore \frac{x+y+z}{3} = x+11$$

x + 10 + z = 3x + 33

$\Rightarrow -2x + z = 23$ …(i)

$$\frac{x+y+z}{3} = z-15$$

$\Rightarrow$ x + 10 + z = 3z – 45

$\Rightarrow$ x – 2z = –55 …(ii)

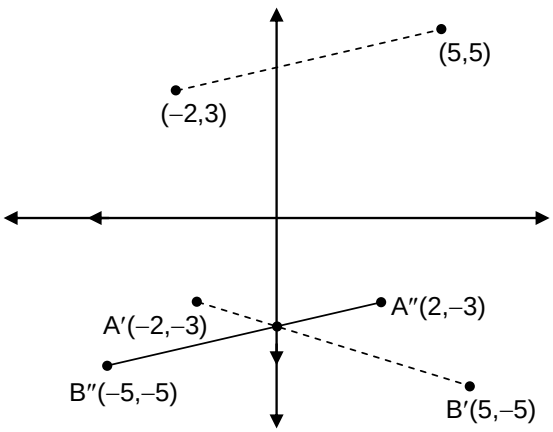
By (i) and (ii),

z = 29, x = 3

$\therefore$ x + y + z = 3 + 10 + 29 = 42

96. 3

Sol. A(–2, 3), B (5, 5) is reflected in x – axis.



Hence new coordinates will be:

A′(–2, –3) and B′(5, –5)

Now it is reflected in y-axis

So, coordinates will be

A″(2, –3) and B″(–5, –5)

$\therefore$ Midpoint of A″ and B″ is: $\left(-\frac{3}{2},-4\right)$

$\therefore$ Sum of coordinates of midpoint of final image $=\frac{-3}{2}-4$

$=-\frac{11}{2}$

$=-5\frac{1}{2}$

97. 3

Sol. Kidney removes N_2 waste such as urea and uric acid from the blood.

98. 4

Sol. Gravitational field inside hollow sphere is zero. Hence gravitational force is zero.

99. 3

Sol. |x| + y = 4

At y-axis, |x| = 0

$\therefore$ y = 4 $\Rightarrow$ coordinates (0, 4)

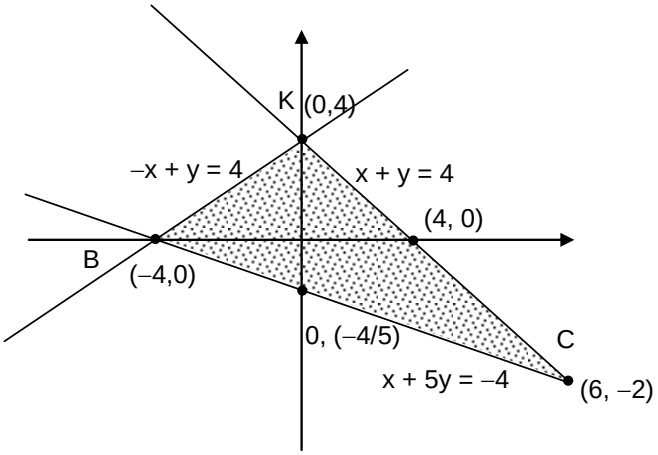
At x-axis, y = 0, $\therefore$ |x| = 4 $\Rightarrow$ x = $\pm$ 4

$\therefore$ Coordinates of points (4, 0), (–4, 0)

Now the line x + 5y = –4

Again at x-axis, y = 0 $\Rightarrow$ coordinate of point (–4, 0) and at Y axis x = 0 $\Rightarrow$ $y=\frac{-4}{5}$

$\therefore$ coordinate of point = (0, $\frac{-4}{5}$)



$\therefore$ Intersection point of line.

x + y = 4 and x + 5y = –4 will be (6, –2)

Now we need to find the area of ΔKBC.

where K(0, 4), B(–4, 0) and C(6, –2)

$\Delta=\frac{1}{2}\left|x_1\left(y_2-y_3\right)+x_2\left(y_3-y_1\right)+x_3\left(y_1-y_2\right)\right|$

$=\frac{1}{2}\left|0\left(y_2-y_3\right)+\left(-4\right)\left(-2-4\right)+6\left(4-0\right)\right|$

$=\frac{1}{2}\left|24+24\right|=\frac{48}{2}=24$