All India Science Teachers' Association, West Bengal
SCIENCE APTITUDE AND TALENT SEARCH TEST - 2025

Time : 2 hr. 30 min. **Full Marks : 100**

Class - VIII

INSTRUCTIONS :

1) Write your name, class, name of school and roll number both at left and right side on the answer sheet. 2) In the question paper you will find four probable answers : a), b), c) and d) against each question. Find out which one of the answers is correct or the best. There are four circles on the answer sheet corresponding to each question below a), b), c) and d). Now mark the circle below the letter of selected answer by putting a cross mark distinctly with a ball pen. If c) is the correct answer, you are to mark ○○⊗○. **3) 1 mark will be awarded for each correct answer and 1 mark will be deducted for 3 wrong answers.** 4) Don't write anything on the question paper. Don't mark answers on the question paper. Submit the answer sheet only after the examination. 5) You may use additional blank sheet for any rough work, if necessary. 6) Do not waste time for any question which appears difficult to you, better try next question. If you consider first answer to be wrong, blacken it like ● and put ⊗ on correct answer.

1. Main component of coral reef is

a) calcium nitrate b) calcium phosphate

c) calcium carbonate d) calcium sulphate

2. The solid river of ice means

a) glacier b) reservoir c) iceberg d) snow rain

3. Loss of biodiversity is not caused by

a) deforestation b) illegal hunting

c) scarcity of fresh water d) gardening

4. Pollution is minimum in

a) asbestos factory b) main road

c) play ground d) kitchen

5. One endangered species is

a) crocodile b) vulture of Bengal

c) wall lizard d) camel

6. The state animal of West Bengal is

a) vulture b) dolphin c) leopard d) fishing cat

7. Which of the following is found in larger amounts in the cells of flying animals ?

a) Mitochondria b) Centrosome

c) Golgi body d) Endoplasmic reticulum

8. The mesosome of a bacterial cell is comparable to eukaryotic cell's

a) ribosome b) mitochondria

c) plastid d) cell wall

9. The vitamin present in tea is

a) Vit A b) Vit C c) Vit B Complex d) Vit D

10. The incorrect statement is

a) WBC destroys microbes

b) both plant and animal cells have centrosomes

c) red blood corpuscles carry O_2

d) the basal cells of nail and hair divide again and again

11. 'Antibiotics' are used to destroy

a) bacteria b) virus c) fungus d) cancer cells

12. The sugars present in honey are

a) galactose and lactose b) lactose and glucose

c) glucose and levulose d) glucose and fructose

13. One exotic species of fish is

a) telapia b) tangra c) eel d) bhetki

14. The pigment that produces 'cold light' in deep sea animals is

a) luciferase b) haemocyanin

c) luciferin d) chlorophyll

15. Spawn of fish is produced from

a) ovum b) fertilized egg

c) sperm d) unfertilized egg

16. The incorrect pair is

a) pupa-bee b) scion-grafting

c) brama-duck d) estrogen-gonad

17. Glycogen is stored in the body by the action of

a) cortisol b) thyroxin c) STH d) insulin

18. Examples of an endocrine gland is

a) salivary gland b) testis c) liver d) parotid gland

19. A pair of symbiotic bacteria is

a) Rhizobium and Azotobactor b) Clostridium and Nitrosomonus

c) Rhizobium and Bacillus d) Rhizobium and E.coli

20. 'Stilt Root' is found in

a) rhizophora b) orchid c) herbs d) pine tree

21. The type of 'Ratna' rice is

a) long periodic b) mid periodic

c) short periodic d) nabi

22. The disease caused by 'Protozoa' is

a) cholera b) malaria c) ring worm d) pox

23. The structure of 'grana' is found in

a) plastid b) mitochondria

c) nucleus d) ribosome

24. Primordial utricle is found in

a) animal cell b) muscle cell c) plant cell d) nerve cell

25. The bacteria which propagate at nearly 100°C temperature are called

a) thermophobic b) thermostatic

c) thermonastic d) thermophilic

26. 'Gerbil' is found in

a) mountain b) desert c) plains d) ocean

27. 'Antifreeze' protein is the characteristics of

a) river fish b) sea fish c) cold water fish d) arctic fish

28. Example of an ex-situ conservation is

a) sanctuary b) national park

c) cryopreservation d) reserve forest

29. To develop immunity of the body we use

a) injection b) vaccine

c) medicine d) both a) & b)

30. Ginger is a part of a plant's

a) stem b) root c) fruit d) root hair

31. A cyclist applied brakes when the cycle was running at the velocity of 7 m/s. The velocity of the cycle came down to 3 m/s in 2 second. If the application of same force by brakes were continued, the cycle stopped

a) 4 second after the first application of brakes

b) 3 second after the first application of brakes

c) 1 second after it reached the velocity of 3 m/s

d) 1.5 second after it reached the velocity of 3 m/s

32. While a student takes a bag loaded with books on the shoulder, she feels less uncomfortable if the strap of the bag over her shoulder is wider. This is because the wider strap

a) reduces the force on the shoulder

b) reduces both force and pressure on the shoulder

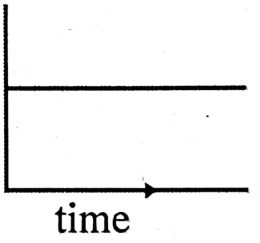
c) reduces only the pressure on the shoulder

d) reduces the chance of tearing the bag

33. A body of mass 5.0 kg is placed on a smooth table. A spring balance is attached to the body. It is pulled horizontally. The reading of the balance, when the body starts moving, is

a) any value above 0 N b) 9.8 N c) 49 N d) 9.8 Pa

34. The graph shown beside is related to the motion of a particle moving with constant velocity. The ordinate (vertical axis) of the graph represents the particle's



a) displacement b) velocity c) acceleration d) energy

35. A 45 kg trolley with a load 15 kg is moving with a uniform velocity of 6 m/s on a pair of horizontal rails. The load slipped down. Then the velocity of the trolley becomes

a) 6 m/s b) 7 m/s c) 8 m/s d) 9 m/s

36. A metal pot half-filled with water is placed on a burning gas oven. After a while the temperature of the pot at the bottom, in contact with flame, is t_b, at the outer vertical surface is t_s and that of the water is t_w. Then

a) $t_b > t_w > t_s$ b) $t_b < t_s > t_w$ c) $t_b > t_s > t_w$ d) $t_w > t_s > t_b$

37. The unit of the universal gravitational constant G is equal to

a) $N.kg^{-2}.m^2$ b) $N.kg^{-2}.m^3$ c) $N.kg.m^2$ d) $J.kg^{-2}$

38. The potential difference between the surface of the earth and the layer of air in the atmosphere about 50 km above the surface of the earth is approximately

a) 2.0×10^4 volt b) 4.0×10^5 volt

c) 4.0×10^4 volt d) 2.0×10^5 volt

39. The heat from the sun reaches the earth

a) by conduction as gravitation exists between the earth and the sun

b) by radiation up to the upper layer of atmosphere and then by convection

c) partly by conduction and partly by convection

d) by radiation only

40. A material having same melting and freezing point under same superincumbent pressure is

a) wax b) ice c) butter d) glass

41. Three pieces of different solids A, B and C have masses m_A, m_B and m_C respectively and their specific heats are S_A, S_B and S_C respectively. Each of them is supplied with an equal quantities of heat. Rise of temperature in them must be equal

a) always b) if $m_A = m_B = m_C$

c) if $S_A = S_B = S_C$ d) if $S_A m_A = S_B m_B = S_C m_C$

42. Two point masses m_1 and m_2 separated by a distance d attract each other with a force F on the surface of the earth. These masses are taken to the surface of the moon and are kept separated by a distance 2d. The force of attraction between them will be

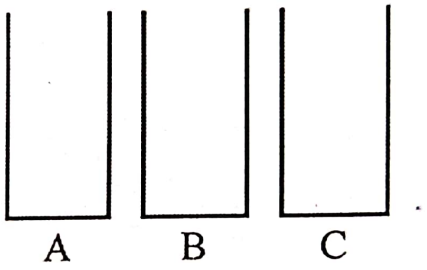
a) F/6 b) 6F c) F/24 d) F/4

43. According to Coulomb's law for electrostatic attraction or repulsion between two charges in free space, the expression for the force contains a constant k. The unit of k is

a) $(N.m^2) / (coulomb)^2$ b) $(kg.m^2.s^{-2}) / (coulomb)^2$

c) $(coulomb)^2.N/m^2$ d) $kg^2.m^2.s^{-2} / (coulomb)^2$

44. Each of three identical plastic cylinders A, B, and C, placed at the edge of a table, have identical holes on walls just 1 cm above the bottom. The holes are sealed with tapes. Three different liquids with increasing densities d_A, d_B and d_C are respectively put in the cylinders A, B and C up to height 3 cm. Now the sealing tapes are removed. Liquid from the cylinders come out and reach horizontal distances x_A, x_B and x_C respectively. Then



a) $x_A = x_B = x_C$ b) $x_A > x_B > x_C$

c) $d_C.x_C = d_B.x_B = d_A.x_A$ d) $x_A < x_B < x_C$

45 Two bodies C and D are rubbed. D is found to be negatively charged. It happens as

a) the atmosphere around has taken away some positive charges from D

b) D has transferred some of its positive charges to C

c) C has transferred some negative charges to D

d) negative charges were exchanged between C and D, but D gained more negative charges

46. A piece of iron is dropped into a tall jar containing water. It can be seen the piece of iron moves towards the bottom of the jar at a

slower speed compared to the case when it is allowed to fall freely in air. This happens as

a) water produces some reverse velocity to the piece of iron

b) the value of 'g' gets reduced inside water

c) the positive charges in water repel the positive charges in the metal

d) upward resistance of liquid is more than that in comparison to air

47. Two similar sparks are those seen to

a) fire match stick and to put on electric switch

b) fire match stick and the thunder spark

c) sharpen a knife and to put on electric switch

d) put on electric switch and the thunder spark

48. A piece of metal of mass 1 kg and at a temperature 120° C is dropped into a container with 300 g of water. The specific heat of the metal is 0.3 cal. $°C^{-1}.g^{-1}$. The final temperature of water is found to be 80°C. If the heat taken by the container of water be insignificant, the initial temperature of water was

a) 30°C b) 40°C c) 50°C d) 60°C

49. The SI unit of pressure is called pascal (written as Pa). Another unit for pressure is 'bar' and it is widely used while talking about atmospheric pressure. The units pascal and bar are related as

a) 1000 Pa = 1 bar b) 1×10^{-4} bar = 10 Pa

c) 10^{-5} Pa = 1 bar d) 1000 bar = 1 Pa

50. The term 'reaction' in Newton's third law of motion, represents a (an)

a) force b) acceleration c) momentum d) work

51. The metal present in photographic film is

a) aluminium b) silver c) potassium d) nickel

52. A substance, which is a good conductor of heat but a bad conductor of electricity, is

a) diamond b) graphite c) coke d) gas carbon

53. The metal which does not produce H_2 on reaction with dil. HCl is

a) Mg b) Zn c) Fe d) Ag

54. Of the following the isotopic pair is

a) ${}_{1}^{2}H$ & ${}_{1}^{3}H$ b) ${}_{1}^{3}H$ & ${}_{2}^{3}He$

c) ${}_{6}^{14}C$ & ${}_{7}^{14}N$ d) ${}_{6}^{12}C$ & ${}_{7}^{14}N$

55. Statement 'A' : School bells are made up of metal.

Reason 'R' : Metal is a good conductor of heat and electricity

a) 'A' and 'R' are both correct and R is correct explanation of 'A'

b) Both 'A' and 'R' are correct but 'R' is not the correct explanation of 'A'

c) 'A' is correct but 'R' is not correct

d) 'A' is not correct but 'R' is correct

56. $2\,Cu(NO_3)_2 \xrightarrow[heat]{\triangle} 2\,CuO + 4\,A + O_2$. In this reaction A, a brown - coloured gas, is

a) NO b) N_2O c) NO_2 d) N_2O_5

57. The formula of the compound formed with Al^{3+} and F^- is

a) Al_3F b) AlF c) Al_2F_3 d) AlF_3

58. A pungent smelling gas evolved, when a mixture of slaked lime and salammoniac are grinded in hand, is

a) ammonia b) chlorine c) nitrogen d) hydrogen sulphide

59. H_2 (g) + Cl_2 (g) $\rightarrow$ 2 HCl (g). The condition for this reaction is

a) sunlight b) pressure c) sound d) solvent

60. The main component of rock salt is

a) $CaCl_2$ b) $MgCl_2$ c) NaCl d) $MgBr_2$

61. At 25°C pH of tamarind water is

a) > 7 b) 7 c) < 7 d) 0

62. Which of the following Calcium compound is the main component of hard shell of snail ?

a) Phosphate b) Carbonate c) Nitrate d) Chloride

63. Bromine : red Coloured liquid : : Chlorine : X. X is

a) violet coloured solid b) violet coloured liquid

c) greenish yellow gas d) red coloured gas

64. An isoelectronic pair is

a) Al^{3+} & N^{3-} b) Na^+ & Cl^-

c) Ca^{2+} & O^{2-} d) K^+ & Na^+

65. Number of covalent bond present in ammonia molecule is

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

66. The metallic oxide acidic in nature is

a) Al_2O_3 b) ZnO c) Cr_2O_3 d) CaO

67. $Mg \xrightarrow{\text{(combustion in } O_2)} A \xrightarrow{+ H_2O} B$. In this reaction A and B are respectively

a) MgO & $Mg(OH)_2$ b) Mg_3N_2 & $Mg(OH)_2$

c) MgO_2 & $Mg(OH)_2$ d) $Mg(OH)_2$ & MgO

68. Metals having variable valencies are

a) Fe & Na b) K & Cu c) Na & K d) Fe & Sn

69. Which of the aqueous solution of the following substances is a bad conductor of electricity ?

a) Table salt b) Sugar c) Blue Vitriol d) Vinegar

70. $Fe + H_2SO_4 \rightarrow FeSO_4 + H_2$. In this reaction Fe atom

a) loses 1 electron b) gains 1 electron

c) loses 2 electrons d) gains 2 electrons

71. If 5 men can do a piece of work in 10 days, then working at the same rate the number of men who can complete the same work in $3\frac{1}{3}$ days is

a) 15 b) 12 c) 18 d) 20

72. The product of $\sqrt{\frac{288}{162}}$ and $\sqrt{\frac{27}{48}}$ is

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

73. The marks scored in an examination by Rina in various subjects are expressed in a pie chart. Total marks she obtained is 540. In science sector, the angle at centre is 86°, so her score in science is

a) 129 b) 99 c) 125 d) 158

74. If $a^3 = -729$ and $b^3 = 64$, then the value of $(a - b)$ is

a) -5 b) 5 c) 0 d) -13

75. The length and breadth of a rectangular plot are 8x metre and x/2 metre respectively. The cost of fencing 4 sides of a square plot equal in area to this rectangle at the rate of Rs. 20 per meter is in rupees

a) 110 x b) 90 x c) 160 x d) 50 x

76. If $x+\frac{4}{x} = 4$, then the value of $x^3+\frac{1}{x^3}$ is

a) $8\frac{1}{8}$ b) 4 c) 16 d) $4\frac{1}{4}$

77. In Δ PQR, $\angle$ QPR = $\frac{1}{2}$ $\angle$ PQR and the bisector of $\angle$ PQR intersects PR at X. If $\angle$ QXR = 80°, then the measure of $\angle$ QRP is

a) 40° b) 70° c) 60° d) 80°

78. 'A' paints $\frac{1}{3}$ rd of a room in 13 days, 'B' paints $\frac{1}{4}$ th of the same room in 10 days, and 'C' paints 40% of the same room in 15 days. In shortest time to paint the room can be done by

a) A and B b) C c) B d) A

79. The supplement of complement of $\frac{5}{6}$ th of a right angle is

a) 80° b) 75° c) 105° d) 165°

80. Internal bisector of $\angle$ ABC and external bisector of $\angle$ ACB of triangle ABC intersect each other at I. If $\angle$ BIC = 50°, the measure of $\angle$ BAC in degrees is

a) 110 b) 100 c) 130 d) 50

81. If $p - q = 2$ and $pq = 24$, then the value of $p^3 + q^3$ is

a) 152 b) 0 c) 280 d) 40

82. If $\frac{px+q}{rx+t} = \frac{1}{m}$ then the value of x is

a) $\frac{t-qm}{pm-r}$ b) $\frac{pm+t}{qr-1}$

c) $\frac{qm+r}{t+pm}$ d) none of a), b) or c)

83. One factor of $4x^4 + 1$ is

a) $x^2 + 2x - 1$ b) $2x^2 - x - 1$

c) $2x^2 + 2x + 1$ d) $x^2 - 2x - 1$

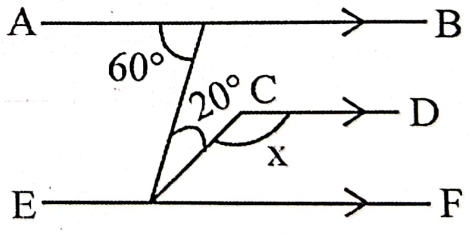
84. In Δ ABC if $3\angle A = 4\angle B = 6\angle C$, then the value of $\frac{\angle B}{2}$ in degrees is

a) 35 b) 30 c) 20 d) 40

85. In the given figure AB | | CD | | EF, then the measure of x in degrees is

a) 40 b) 120

c) 100 d) 140



86. If $a + b + c = 9$ and $a^2 + b^2 + c^2 = 29$, then the value of $ab + bc + c$ is

a) 26 b) 48 c) 58 d) 72

87. If 50% of $(A - B)$ = 30% of $(A + B)$, then the value of A : B is

a) 5 : 2 b) 7 : 5 c) 4 : 1 d) 3 : 2

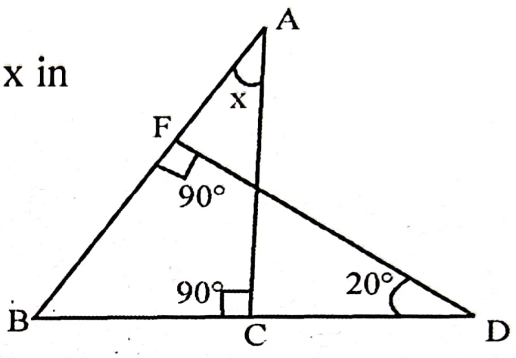
88. The number of square shaped tiles, each of side 0.5 m required to cover a floor of rectangular room 10 m long and 8 m broad is

a) 160 b) 320 c) 640 d) 120

89. A mixture of 30 litre contains milk and water in the ratio of 7 : 3. The amount of water in litre that must be added to it so that the ratio of milk and water becomes 3 : 7 is

a) 42 b) 35 c) 20 d) 40

90. Δ ABC and Δ BDF are two right angled triangles. The measure of x in degrees is



a) 70 b) 40

c) 45 d) 20

91. A book was sold for Rs. 720 at a loss of 25%. The selling price of this book to gain 25% in rupees will be

a) 1200 b) 1000 c) 920 d) 1020

92. The simplest value of $\sqrt{a^{-2/3}b^4c^{-1/3}} \div \sqrt[3]{a^2b^4c^{-1}}$ is

a) $a^{1/3}b^{-1}c^{-2}$ b) $a^{-1}bc^{1/6}$

c) $a^2bc^{2/3}$ d) $a^{-1}b^{2/3}c^{1/6}$

93. In a quadrilateral ABCD, ∠ADC = 50° and ∠BCD = 100°. Bisector of angles ∠DAB and ∠ABC meet at P. Measure of ∠APB in degrees is

a) 105 b) 75 c) 85 d) 60

94. The number of sides of a polygon with 54 diagonals is

a) 26 b) 9 c) 12 d) 27

Blue
C/B

95. The natural number which when increased by 7 becomes equal to 60 times the reciprocal of the number. The number is

a) 7 b) 12 c) 8 d) 5

96. Diagonals BS and TE of the rectangle BEST intersect each other at O. If BO = 3x + 4 and TO = 5x – 2, then the length of the diagonal BS is

a) 26 b) 30 c) 13 d) 10

97. Sum of the squares of 3 consecutive even positive numbers is 56. The sum of the numbers is

a) 10 b) 18 c) 12 d) 14

98. Time taken by a 50 m long train running at a speed of 54 km per hour to cross a 100 m long platform in second is

a) 40 b) 10 c) 15 d) 20

99. The simplest value of $(1 - \frac{1}{3})(1 - 1/4)(1 - 1/5) \ldots\ldots (1 - 1/p)$ is

a) $\frac{2}{p}$ b) $\frac{1}{p}$ c) $\frac{p-1}{p}$ d) $\frac{p}{p-1}$

100. What is the perimeter of a square of area 625 square meter ?

a) 108 m b) 200 m c) 120 m d) 100 m

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