ALLEN SHARP

**ALLEN's Scholarship Test and Reward Program**

SAMPLE TEST PAPER

Class IX

1. The CGS unit of acceleration is

(1) cm/s   (2) cm/min   (3) cm/s^2 (4) cm/min^2

2. A body is thrown vertically upward with velocity (u) .The greatest height h to which it will rise is

(1) u/g   (2) u^2/2g   (3) u^2/g   (4) u/2g

3. If the displacement of an object is proportional to square of time, then the object moves with

(1) Uniform velocity   (2) Uniform acceleration

(3) Increasing acceleration   (4) Decreasing acceleration

4. Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in figure. Choose the correct statement
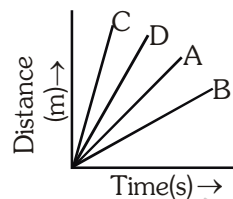
(1) Car A is faster than car D   (2) Car B is the slowest

(3) Car D is faster than car C   (4) Car C is the slowest

5. A heavy ball is suspended as shown. A quick jerk on the lower string will break that string but a slow pull on the lower string will break the upper string. The first result occurs because
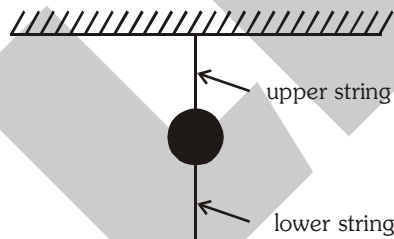
(1) the force is too small to move the ball   (2) action and reaction is operating

(3) the ball has inertia   (4) air friction holds the ball back

6. When the driver of a fast moving car suddenly applies brakes, the passengers in the car

(1) fall backward   (2) fall forward   (3) are not affected   (4) none of the above

7. A passenger sitting in a train with his face in the direction of the moving train, tosses a coin which falls behind him. It means that motion of the train is

(1) accelerated   (2) uniform

(3) retarded   (4) along circular tracks

8. A body P has mass 2 m and velocity 5 v. Another body Q has mass 8 m and velocity 1.25 v. The ratio of momentum of P and Q is

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

9. A boy is whirling a stone tied with a string in a horizontal circular path. If the string breaks, the stone

(1) will continue to move in the circular path

(2) will move along a straight line towards the centre of the circular path

(3) will move along a straight line tangential to the circular path

(4) will move along a straight line perpendicular to the circular path away from the boy

10. Consider a satellite going round the earth in a circular orbit. Which of the following statements is wrong?

(1) It is a freely falling body.

(2) It is moving with constant speed.

(3) It is acted upon by a force directed away from the centre of the earth which counter-balances the gravitational pull

(4) It is an accelerated motion

11. A planet revolves in an elliptical orbit around the Sun. The semi-major and semi-minor axes are 'a' and 'b'. Then the square of time period T is directly proportional to

(1) a^3
(2) b^3
(3) $\left(\dfrac{a+b}{2}\right)^3$
(4) $\left(\dfrac{a-b}{2}\right)^3$

12. If 'g' is the acceleration due to gravity on earth, what is the acceleration due to gravity on another planet having mass and radius twice that of earth?

(1) $\dfrac{g}{2}$
(2) $2g$
(3) $\dfrac{g}{4}$
(4) $4g$

13. A cube of butter of side 2 cm has a density $860 \, \text{kg/m}^3$. What is its mass?

(1) 9.31 g
(2) 7.50 g
(3) 6.88 g
(4) 1.72 g

14. If the density of Aluminium is 2700 kg m^{-3}, then its value in the CGS system is

(1) 2700 g cm^{-3}
(2) 270 g cm^{-3}
(3) 27×10^5 g cm^{-3}
(4) 2.7 g cm^{-3}

15. A ball weighing 4 kg of density 4000 kg m^{-3} is completely immersed in water of density 1000 kg m^{-3}. Find the force of buoyancy on it. (Given g = 10 m s^{-2})

(1) 100 N
(2) 1 N
(3) 20 N
(4) 10 N

16. An object weighs 10 N in air. When immersed fully in water, it weighs only 8 N. The weight of the liquid displaced by the object will be

(1) 2 N
(2) 8 N
(3) 10 N
(4) 12 N

17. An object hangs from a spring balance. The balance indicates 30 N in air and 20 N when the object is submerged in water. What does the balance indicate when the object is submerged in a liquid with a density that is half that of water?

(1) 20 N
(2) 25 N
(3) 30 N
(4) 35 N

18. When speed of a moving object is doubled its

(1) acceleration is doubled

(2) momentum becomes four times more

(3) kinetic energy is increased four times

(4) potential energy is increased four times

19. A car is accelerated on a levelled road and attains a velocity 4 times of its initial velocity. In this process, the potential energy of the car

(1) does not change

(2) becomes twice of initial

(3) becomes 4 times of initial

(4) becomes 16 times of initial

20. Water stored in a dam possesses

(1) no energy
(2) electrical energy
(3) kinetic energy
(4) potential energy

21. A boy of mass 40 kg runs up a flight of 50 steps, each 10 cm high. How much is the change in his potential energy ? (Take g = 10 m/s^2)

(1) 3500 J
(2) 2050 J
(3) 2000 J
(4) 4000 J

22. Arrange the following media in ascending order of speed of sound in them :

A – Water ;   B – Steel ;   C – Nitrogen

(1) C, A, B   (2) C, B, A   (3) B, A, C   (4) A, C, B

23. Earthquake produces which kind of sound before the main shock wave begins?

(1) ultrasound   (2) infrasound   (3) audible sound   (4) none of the above

24. Infrasound can be heard by

(1) dog   (2) bat   (3) rhinoceros   (4) human beings

25. When we change feeble sound to loud sound we increase its

(1) frequency   (2) amplitude   (3) velocity   (4) wavelength

26. A small amount of the sample of a soil was mixed with water in beaker. After stirring for some time, the beaker was allowed to stand. The mud was found to settle down. The liquid above the mud was carefully filtered. The filtrate will be :-

(1) a true solution

(2) a colloidal solution

(3) can be a true solution or a colloidal solution

(4) a suspension

27. Water was taken in four beakers labeled as I to IV. To these beakers the following substances were added. Beaker (I) Common salt (II) Alum (III) Potassium nitrate (IV) A few drops of barium chloride and a few drops of dilute sulphuric acid. After sometime, the contents of the beakers were filtered. The contents of which beaker will leave residue on the filter paper.

(1) Beaker (I)   (2) Beaker (II)   (3) Beaker (III)   (4) Beaker (IV)

28. Which of the following statement is correct?

(1) A pure substance must contain only one type of atom.

(2) A mixture containing two compounds must be heterogeneous.

(3) A heterogeneous mixture must contain at least three elements.

(4) A homogeneous mixture must be uniform.

29. Soda water is a solution of carbon dioxide in water. What is this solution composed of?

(1) Liquid solute in a gaseous solvent   (2) Gaseous solute in a liquid solvent

(3) Liquid solute in a liquid solvent   (4) Gas is suspended form in liquid

30. In chromatography different constituents of a mixture get adsorbed differently on same adsorbent because :-

(1) They have difference in pressure   (2) They have different rates of movement

(3) They have different solubility   (4) All of these

31. The gas which is added to water to kill germs is :-

(1) CO_2 (2) Cl_2 (3) O_2 (4) H_2

32. To supply drinking water in a city the water from a river is pumped by the pumping station into a large reservoir called :-

(1) sedimentation tank   (2) loading tank   (3) filtration tank   (4) chlorination tank

33. Which of the following is a non-aqueous solvent?

(1) Water   (2) Benzene   (3) Both (1) and (2)   (4) None of the above

34. Super saturated solution contains :-

(1) amount of solute more than saturation level   (2) amount of solute less then saturation level

(3) amount of solute equal to saturation level   (4) no solute at all

35. How is Brownian motion caused?
(1) Through temperature fluctuations within the liquid phase
(2) Through attraction and repulsion between the charges on the colloidal particles
(3) Through collision of molecules between the colloidal particles
(4) Through pressure variations within the liquid phase

36. What are the materials which contain at least two pure substances and show the properties of their constituents called?
(1) A compound   (2) An element   (3) A mixture   (4) A solution

37. Which of these statements is/are true?
(1) The components of a suspension can be separated by filtration.
(2) The particles of a colloid can pass through a filter paper.
(3) The constituents of a compound can be separated easily.
(4) Both (1) and (2)

38. A sample of pure water, irrespective of its source contains 11.1% hydrogen and 88.9% oxygen. The data supports :-
(1) Law of constant proportions   (2) Law of conservation of mass
(3) Law of reciprocal proportions   (4) Law of multiple proportions

39. Which of the following is a triatomic molecule?
(1) Carbon dioxide   (2) Ammonia   (3) Helium   (4) Sugar

40. Which of the following elements has a symbol with two letters?
(1) Tin   (2) Uranium   (3) Carbon   (4) Boron

41. Which of the following represents a polyatomic ion?
(1) Sulphide   (2) Chloride   (3) Sulphate   (4) Nitride

42. Which is not correct according to Dalton's atomic theory?
(1) Atoms are indivisible.
(2) Atoms combine in simple whole number ratios.
(3) All atoms of an element may not have same mass.
(4) Atoms of different elements have different masses

43. Which of the following statements is/are incorrect?
I. Centrifugation method can be used to separate butter from cream.
II. Coloured component of blue ink can be obtained by evaporation.
III. Chromatography can be used to detect drugs in blood.
IV. Camphor can be separated from salt by crystallisation.
(1) II only   (2) II and III only   (3) IV only   (4) II and IV only

44. Which of the following has the smallest mass?
(1) 4 g of He   (2) 6.023×10^{23} atoms of He
(3) 1 atom of He   (4) 1 mole atoms of He

45. The number of carbon atoms in 1 g of CaCO3 is :-
(1) 6.023×10^{23} (2) 6.023×10^{21} (3) 3.0125×10^{22} (4) 1.204×10^{23}

46. 6.023×10^{20} atoms of silver (Atomic mass = 108 u) weight :-
(1) 108×10^{3} g   (2) 108 g   (3) 0.108 g   (4) 10.8 g

47. Which of the following has largest number of molecules?
(1) 8 g of CH_4 (2) 4.4 g of CO_2 (3) 34.2 g of $C_{12}H_{22}O_{11}$ (4) 2 g of H_2

48. Which of the following contains one mole molecules of the substance?
(1) 16 g Oxygen   (2) 7 g Nitrogen   (3) 2 g Hydrogen   (4) 36 g Water

49. The number of molecules in 16.0 g of oxygen is :-
(1) 6.02×10^{23} (2) 6.02×10^{-23} (3) 3.01×10^{-23} (4) 3.01×10^{23}

50. The volume of one mole of a gas at normal temperature and pressure is :-

(1) 11.2 litres   (2) 22.4 litres   (3) 100 litres   (4) None of these

51. $\dfrac{(x^{a+b})^2(x^{b+c})^2(x^{c+a})^2}{(x^a.x^b.x^c)^4} =$

(1) –1   (2) 0   (3) 1   (4) None

52. The value of $\left[(x^{a-a^{-1}})^{\frac{1}{a-1}}\right]^{\frac{a}{a+1}} =$

(1) x   (2) 1/x   (3) x^a (4) $1/x^a$

53. If $x^2 + kx + 6 = (x + 2)(x + 3)$ for all x, then the value of k is

(1) 1   (2) – 1   (3) 5   (4) 3

54. If $p(x) = x^2 - 2\sqrt{2}x + 1$, then $p(2\sqrt{2})$ is equal to

(1) 0   (2) 1   (3) $4\sqrt{2}$ (4) $8\sqrt{2} + 1$

55. If a point C lies between two points A and B such that AC = BC, then

(1) AC = AB   (2) AC = $\dfrac{1}{2}$ AB   (3) AB = $\dfrac{1}{2}$ AC   (4) AC = $\dfrac{1}{3}$ AB

56. f two angles are complementary of each other, then each angle is

(1) An Obtuse angle   (2) A Right angle

(3) An Acute angle   (4) A supplementary angle.

57. In figure, if OP ∥ RS, ∠OPQ = 110° and ∠QRS = 130°, then ∠PQR is equal to

(1) 40°

(2) 50°

(3) 60°

(4) 70°
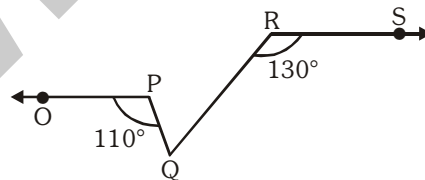
58. If ABCD is a square and DCE is an equilateral triangle in the given figure, then ∠DAE is equal to

(1) 45°

(2) 30°

(3) 15°

(4) $22\dfrac{1}{2}^\circ$
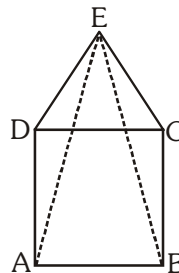
59. Two sides of a triangle are of lengths 5 cm and 1.5 cm. The length of the third side of the triangle cannot be

(1) 3.6 cm   (2) 4.1 cm   (3) 3.8 cm   (4) 3.4 cm

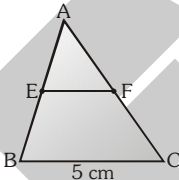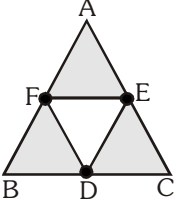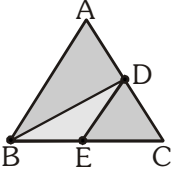**60.** The difference between the abscissa of (–4, 7) and (1, –5) is

(1) – 5   (2) 12   (3) 2   (4) 3

61. If the difference between abscissa of points (p, –5), (2, 7) is 13 units, then p is _____.

(1) 15 or – 11   (2) – 15 or 11   (3) –15 or –11   (4) 15 or 11

**62.** The altitude of an equilateral triangle of side $2\sqrt{3}$ cm is

(1) $\dfrac{\sqrt{3}}{2}$ cm

(2) $\dfrac{1}{2}$ cm

(3) $\dfrac{\sqrt{3}}{4}$ cm

(4) 3 cm

63. The perimeter of an isosceles triangle is equal to 14 cm, the lateral side is to the base in the ratio 5 : 4. The area of the triangle is

(1) $\dfrac{1}{2}\sqrt{21}$ cm²

(2) $\dfrac{3}{2}\sqrt{21}$ cm²

(3) $\sqrt{21}$ cm²

(4) $2\sqrt{21}$ cm²

64. The cost of 9 chairs and 3 tables is Rs 306, while the cost of 8 chairs and 2 tables is Rs. 246. Then the cost of 6 chairs and 1 table is

(1) Rs.164

(2) Rs.165

(3) Rs.166

(4) Rs.186

65.

x	−1	0	1	2
y	−3	−1	1	3

which equation fits the data in the table ?

(1) y = x − 2

(2) y = 2x − 1

(3) y = 3x − 3

(4) y = x + 1

66. In figure, E and F are the mid points of sides AB and AC respectively. Find EF.

(1) 3 cm

(2) 2.5 cm

(3) 4 cm

(4) None of these

67. Three angles of a quadrilateral are of magnitudes 80°, 95° and 120°. The magnitude of the fourth angle is

(1) 80°

(2) 65°

(3) 75°

(4) 70°

68. In fig, D,E,F are the mid points of sides BC, CA and AB, if ar(ΔABC) = 28 cm², then ar(AEDF) =

(1) 21 cm²

(2) 18 cm²

(3) 16 cm²

(4) None of these

69. In fig, D and E are the mid-points of the sides AC and BC respectively of ΔABC. If ar(ΔBED) = 12 cm². then ar(ABED) =

(1) 36 cm²

(2) 48 cm²

(3) 24 cm²

(4) None of these

70. The volume of a spherical shell whose internal and external diameters are 8 cm and 10 cm respectively (in cubic cm) is :

(1) $\dfrac{122\pi}{3}$

(2) $\dfrac{244\pi}{3}$

(3) 212

(4) 257

71. A piece of metal pipe is 77 cm long with inside diameter of the cross section as 4 cm. If its outer diameter is 4.5 cm and the metal weighs 8 gm/cu cm, the weight of pipe is _____.

(1) 2.057 kg

(2) 20.57 kg

(3) 205.7 kg

(4) None of these

72. O is the centre of the circle. If chord AB = chord CD, then x =

(1) 70°

(2) 50°

(3) 55°

(4) 45°
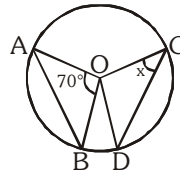
73. If the angles of a triangle are in the ratio 1 : 2 : 7 then the triangle is

(1) Acute angled

(2) Obtuse angled

(3) Right angled

(4) Right angled isosceles

74. The mean of 6, y, 7, x and 14 is 8. Then

(1) x + y = 13

(2) x − y = 13

(3) 2x + 3y = 13

(4) $x^2 + y^2 = 15$

75. If A be the event such that P(A) = 2/5, then P(not A) is equal to

(1) $\dfrac{3}{5}$

(2) $\dfrac{4}{5}$

(3) $\dfrac{1}{5}$

(4) None

76. Bacteria do not possess .

(1) DNA

(2) RNA

(3) Nucleus

(4) Lipids

77. A non-living structure of cell is

(1) Cell wall

(2) Plasma membrane

(3) Cytoplasm

(4) Nucleus

78. Protoplasm excluding nucleus is called

(1) Cytoplasm

(2) Endoplasm

(3) Ectoplasm

(4) Protoplasm

79. Eukaryotic cells devoid of ER are

(1) Liver cells

(2) Kidney cell

(3) Leucocyte

(4) Mature erythrocytes

80. Organelle covered by double membrane is

(1) Nucleus

(2) Mitochondria

(3) Plastid

(4) All of the above

81. Which among them is not a type of parenchyma?

(1) Chlorenchyma (B) Collenchyma (C) Aerenchyma (D) Both (A) and (B)

82. Blood is a

(1) Fluid epithelial tissue

(2) Intracellular tissue

(3) Plasma

(4) Fluid connective tissue

83. Guard cell differ from other epidermal cell by

(1) Presence of chloroplast

(2) Absence of vacuole

(3) Presence of centriole

(4) All of the above

84. Tissue storing fat in our body.

(1) Fibroblast

(2) Adipose

(3) Mast

(4) All of these

**85.** While holding a note book in your hand you are using

(1) Voluntary muscle

(2) Smooth muscle

(3) Involuntary

(4) Both (A) and (B)

86. Egg laying mammal is

(1) Platypus

(2) Blue whale

(3) Kangaroo

(4) None

87. In Binomial nomenclature last name represents

(1) Family   (2) Genus   (3) Species   (4) Phylum

88. Nematoda is

(1) Coelomic   (2) Pseudocoelomic   (3) Acoelomic   (4) None

89. Jelly fish is

(1) Fish   (2) Arthopoda   (3) Mollusca   (4) None

90. Chordata have

(1) Notochord   (2) Dorsal, hollow nerve cord

(3) Postanal tail   (4) All of the above

91. Fishes used in composite culture should be

(1) Competing   (2) Non-competing   (3) Both   (4) None

92. Rearing honey bee is known as

(1) Horticultue   (2) Bee farming   (3) Apiculture   (4) None

93. BGA is

(1) Fungicide   (2) Biofertilizer   (3) Both   (4) None

94. Growing same crop every year

(1) Increase fertility of soil   (2) decrease soil fertility

(3) Has no effect on soil fertility   (4) none

95. Vermicompost is produced by

(1) Fungus   (2) Bacteria like Rhizobium

(3) Earthworm   (4) None

96. Polio is

(1) Bacterial disease (B) Viral disease (C) Protozoan disease (D) None of these

97. Kala-azar is caused by

(1) Protozoa   (2) Virus   (3) Bacteria   (4) Fungus

98. AIDS is transmitted

(1) by air   (2) by mosquito   (3) by water   (D) sexually

99. Lack of iodine cause:

(1) anaemia   (2) osteomalacia   (3) goitre   (4) Fluorosis

100. Melting of Glacier is result of

(1) Water pollution   (2) Soil pollution   (3) Global warming   (4) None of these

101. Pointing ot a person, a man said to a woman, "His mother is the only daughter of your father". How was the woman related to the person?

(1) Sister   (2) Mother   (3) Wife   (4) Daughter

102. If **SELDOON** means **NOODLES** what does **SPUOS** means?

(1) D O M E D   (2) B O M E D   (3) T O M E D   (4) S O U P S

103. If **XY = 600**, **ABC** = 6 then **GO + DO** will be equal to :-

(1) 150   (2) 180   (3) 165   (4) 155

104. How many triangles are there in the following figure?
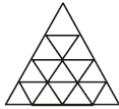
(1) 19   (2) 21   (3) 27   (4) 48

105. The figure given below show the three different position of a dice. Which number will appear opposite to number 4?
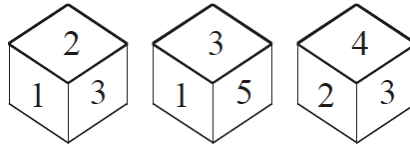
(1) 5   (2) 1   (3) 3   (4) 2

Directions : (106 to 108) A cube painted red on two adjacent faces and black on the faces opposite to the red faces and green on the remaining faces is cut into 64 smaller cubes of equal size.

106. How many cubes have no face painted?

(1) 0   (2) 4   (3) 8   (4) 16

107. How many cubes have only one face painted?

(1) 8   (2) 24   (3) 28   (4) 48

108. How many cubes have less than three faces painted?

(1) 8   (2) 24   (3) 28   (4) 48

109. A man is facing North-West. He turns 90° in the clockwise direction, then 180° in the anticlockwise direction and then another 90° in the same direction. Which direction is he facing now?

(1) South   (2) South-West   (3) West   (4) South-East

110.

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

111.
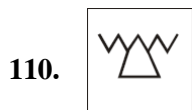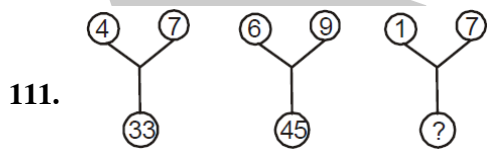
(1) 49   (2) 50   (3) 48   (4) 55

112.

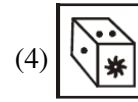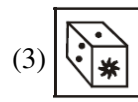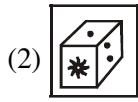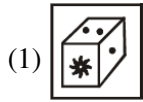| 3	8	10	2	?	1
6	56	90	2	20	0

(1) 0   (2) 3   (3) 5   (4) 7

113. If '+' means 'x', '−' means '÷', 'x' means '−' and '÷' means '+', then what will be the value of $12 \div 48 - 8 \times 4 + 4 = ?$
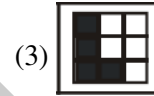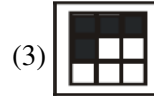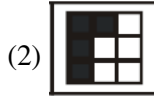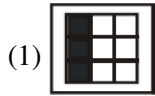
(1) 8   (2) 4   (3) 20   (4) 2

114.

(X)

(1)　　　　　(2)　　　　　(3)　　　　　(4)

115. Problem figures

(A)　(B)　(C)　(D)　(E)

Answer figure

(1)　　　　　(2)　　　　　(3)　　　　　(3)

116. In a class of students, Ravi occupies fifth position from the top and **25th** from the bottom in test. How many students are there in the class?

(1) 30 　　　　(2) 28 　　　　(3) 29 　　　　(4) 25

117. 512, 64, 16, 8, 8, 16, ?

(1) 16 　　　　(2) 32 　　　　(3) 40 　　　　(4) 64

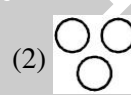**118.** JD, KF, ?, PM, TR

(1) MI 　　　　(2) NJ 　　　　(3) NI 　　　　(4) OJ

119. Which of the following diagram indicates the best relation between Women, Mothers and Engineers?

(1)　　　　　(2)　　　　　(2)　　　　　(4)

120.

(X)

(1)　　　　　(2)　　　　　(3)　　　　　(4)