

Sample Questions for **ASAT**

(ALLEN Scholarship Cum Admission Test)

CLASSROOM CONTACT PROGRAMME

PRE-NURTURE & CAREER FOUNDATION : CLASS-VIII

(FOR VII to VIII MOVING STUDENTS)



Corporate Office

ALLEN CAREER INSTITUTE

"SANKALP", CP-6, Indra Vihar, Kota (Rajasthan)-324005

☎ +91-744-5156100 ✉ info@allen.ac.in

www.allen.ac.in

INSTRUCTIONS

Things NOT ALLOWED in EXAM HALL : Blank Paper, clipboard, log table, slide rule, calculator, camera, mobile and any electronic or electrical gadget. If you are carrying any of these then keep them at a place specified by invigilator at your own risk

1. This booklet is your Question Paper. **DO NOT** break seal of Booklet until the invigilator instructs to do so.
2. Fill your Form No. in the space provided on the top of this page.
3. The Answer Sheet is provided to you separately which is a machine readable Optical Response Sheet (ORS). You have to mark your answers in the ORS by darkening bubble, as per your answer choice, by using black & blue ball point pen.
4. Total Questions to be Attempted 80. Part-I : 20 Questions & Part-II : 60 Questions.
5. After breaking the Question Paper seal, check the following:
 - a. There are **14 pages** in the booklet containing question no. 1 to 80 under 2 Parts i.e. Part-I & Part-II.
 - b. Part-I contains total 20 questions of IQ (Mental Ability).
 - c. Part-II contains total 60 questions under 4 sections which are - Section (A) : Physics, Section (B) : Chemistry, Section(C) : Biology & Section (D): Mathematics.
6. Marking Scheme:
 - a. If darkened bubble is RIGHT answer : **4 Marks**.
 - b. If no bubble is darkened in any question: **No Mark**.
 - c. **Only for part - II** : If darkened bubble is WRONG answer: **-1 Mark (Minus One Mark)**.
7. Think wisely before darkening bubble as there is negative marking for wrong answer.
8. If you are found involved in cheating or disturbing others then your ORS will be cancelled.
9. Do not put any stain on ORS and hand it over back properly to the invigilator.

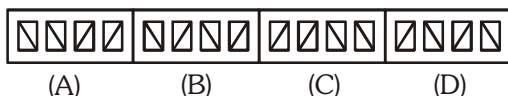
PART-I

IQ (MENTAL ABILITY)

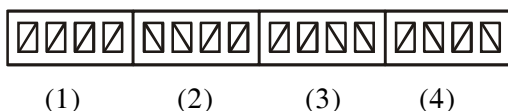
This section contains **20 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

1. Tick (✓) in the answer figures which comes next.

Problem Figure



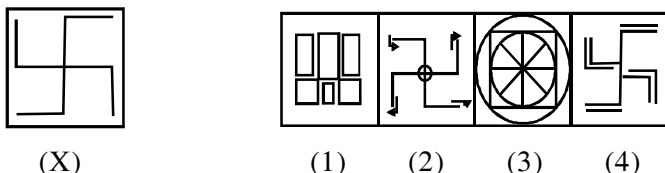
Answer Figure



2. What number should replace the question mark in the diagram?

3	6	9
5	8	20
4	7	?

- (1) 11 (2) 14 (3) 28 (4) 12
3. In the question below, you are given a figure (X) followed by four alternative figures (1), (2), (3) and (4) such that fig. (X) is embedded in one of them. Trace out the figure which contains fig. (X) as its part.



Directions (Q.4 & Q.5) : Six persons A, B, C, D, E and F are sitting in two rows three in each, facing each other.

E is not at the end of any row.

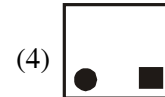
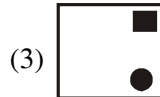
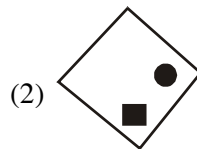
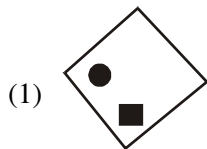
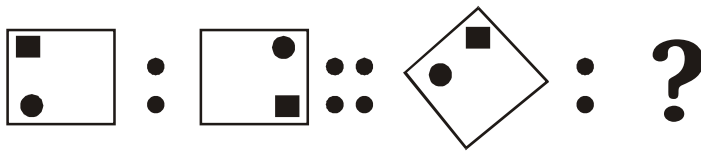
D is second to the left of F.

C the neighbour of E, is sitting diagonally opposite to D.

B is the neighbour of F.

4. Who among the following are sitting in the same row ?
- (1) A and B (2) C and F (3) C and B (4) A and E
5. If D and E exchange their seats who will be the neighbours of D in the new seating arrangement ?
- (1) only C (2) only B (3) E and B (4) C and A

6. Find the matching pair.



7. If MUSK is coded as 146816, then ZERO will be coded as

(1) 1015 (2) 122912 (3) 1813 (4) 914

Directions (Q.8 & Q.9) Nine cricket fans are watching a match in a stadium. Seated in one row, they are J, K, L, M, N, O, P, Q and R. L is to the right of M and at third place to the right of N. K is at one end of the row. Q is seated adjacent to both O and P. O is at the third place to the left of K. J is immediate next to left of O.

8. Who is sitting at the centre of the row ?

(1) L (2) J (3) O (4) R

9. Which of the following statement is true ?

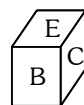
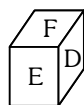
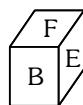
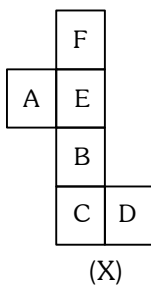
(1) N is two seats away from J.
(2) M is at one extreme end.
(3) R and P are neighbours.
(4) There is one person between L and O.

10. How many p's are there with 'f' before and after them in the sequence?

f p f p p c f f f p f p f p p f f p p p f f f p f p f p f p p f f p f

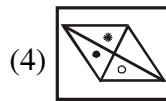
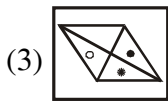
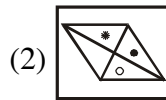
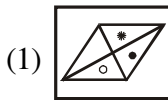
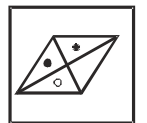
(1) 3 (2) 6 (3) 7 (4) 8

11. Choose the box that is similar to the box formed from the given sheet of paper (X).

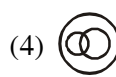
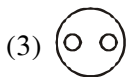
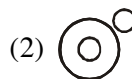
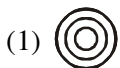


(1) 1 only (2) 2 only (3) 1 and 3 only (4) 1, 2, 3 and 4

12. If $27 * 3 = 243$ and $5 * 4 = 80$. Then what is the value of $3 * 7 = ?$
 (1) 84 (2) 147 (3) 63 (4) 23
13. In the following question, alphabet series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.
 AYBZC, DWEXF, GUHVI, JSKTL ?
 (1) MQORN (2) MQNRO
 (3) NQMOR (4) QMONR
14. If the dotted line shows the mirror, find the correct image of the object from the options (1), (2), (3) & (4).



15. Choose from the four diagrams marked (1), (2), (3) and (4) the one that best illustrates the relationship among three given classes.
 Man, father, brother

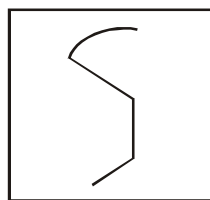


16. Find the missing letter (?)

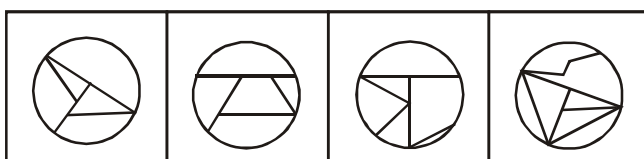
A	D	H
F	I	M
?	N	R

- (1) K (2) N (3) O (4) P

17. In the following question, you are given a figure (X) followed by four alternative figures (1), (2), (3) and (4) such that figure (X) is embedded in one of them. Trace out the alternative figures which contains figure (X) as its part.



(X)



(1)

(2)

(3)

(4)

18. Anmol finds that he is twelfth from the right in a line of boys and fourth from the left, how many boys should be added to the line such that there are 35 boys in the line ?

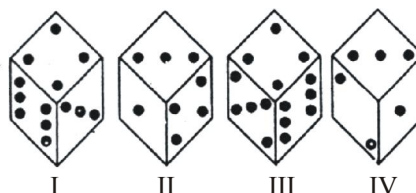
(1) 19

(2) 31

(3) 14

(4) 20

19. How many dots are present on the dice face opposite to the three dots ?



I

II

III

IV

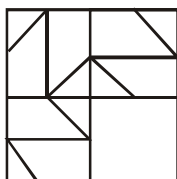
(1) 2

(2) 4

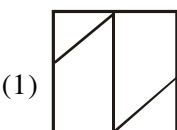
(3) 5

(4) 6

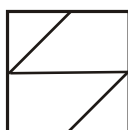
20. In the following question, select a figure from amongst the four alternatives, which when placed in the blank space of fig.(X) would complete the pattern.



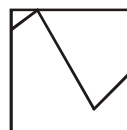
(X)



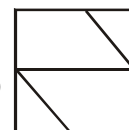
(1)



(2)



(3)



(4)

PART-II

SECTION-A : PHYSICS

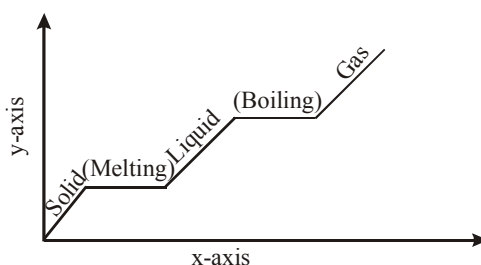
This section contains **12 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

21. Choose the incorrect match.

- | | |
|---------------------------|--------------------------------------|
| (1) m/s – velocity | (2) m/s ² – acceleration |
| (3) light year – distance | (4) m ² /s – displacement |

22. Dhruv made this chart about an experiment in his science class. In this experiment, the students watched a piece of ice warm and change from a solid to a gas on a stove.

What should Dhruv label the x-axis and the y-axis on the chart?



- | | |
|--|--|
| (1) x-axis: time ; y-axis: temperature | (2) x-axis: temperature ; y-axis: time |
| (3) x-axis: weight ; y-axis: time | (4) x-axis: temperature ; y-axis: weight |

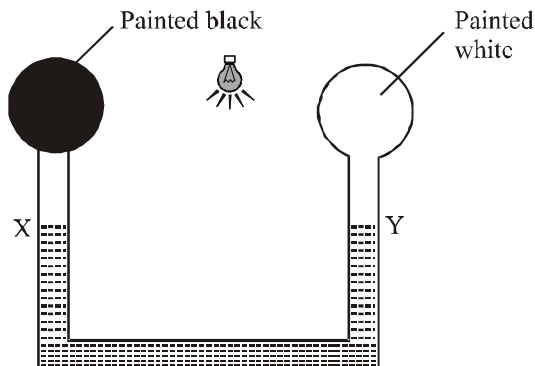
23. What is the order of the colours in the spectrum formed when white light passes through a triangular prism?

- (1) red, orange, green, blue, yellow, indigo, violet
- (2) red, orange, green, yellow, blue, indigo, violet
- (3) red, orange, yellow, green, blue, indigo, violet
- (4) red, yellow, orange, green, blue, indigo, violet

24. A quantity has value of -6.0 ms^{-1} . It may be the

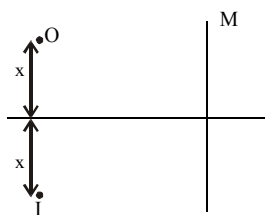
- | | |
|----------------------------|--------------------------------|
| (1) Speed of a particle | (2) Velocity of a particle |
| (3) Position of a particle | (4) Displacement of a particle |

25. The figure shows air-filled bulbs connected by a U-tube partly filled with alcohol. What happens to the levels of alcohol in the limbs X and Y when an electric bulb placed midway between the bulbs is lighted?



- (1) The level of alcohol falls in both limbs.
- (2) The level of alcohol in the limb X rises while that in limb Y falls.
- (3) The level of alcohol in limb X falls while that in limb Y rises.
- (4) There is no change in the levels of alcohol in the two limbs.

26. A virtual image can never be
(1) smaller than the object. (2) larger than the object.
(3) captured on paper. (4) upright if the object is upright.
27. A car moves with a speed of 60 km h^{-1} for 20 min and then at a speed of 30 km h^{-1} for the next 20 min. The total distance covered by the car is
(1) 10 km (2) 20 km
(3) 30 km (4) 40 km
28. Which of the following motions is not uniform?
(1) A satellite in orbit around the Earth.
(2) A ball rolls along a table without changing velocity.
(3) A jogger runs 50 m along a straight track at a constant speed.
(4) An elevator moves vertically upward at zero acceleration.
29. Freezing point on a thermometer is marked as 20° and boiling point as 150° . A temperature of 60°C on this thermometer will be read as
(1) 25° (2) 65° (3) 98° (4) 110°
30. Stainless steel pans are usually provided with copper bottoms. The reason for this could be that
(1) Copper bottom makes the pan more durable
(2) Such pans appear colourful
(3) Copper is a better conductor of heat than the stainless steel
(4) Copper is easier to clean than the stainless steel
31. As the distance of an object from a converging mirror decreases, the image
(1) increases in size and moves away from the mirror.
(2) increases in size and moves toward the mirror.
(3) decreases in size and moves away from the mirror.
(4) decreases in size and moves toward the mirror.
32. In the diagram shown, M is a mirror, O is an object and I is its image. Predict the nature of the mirror.

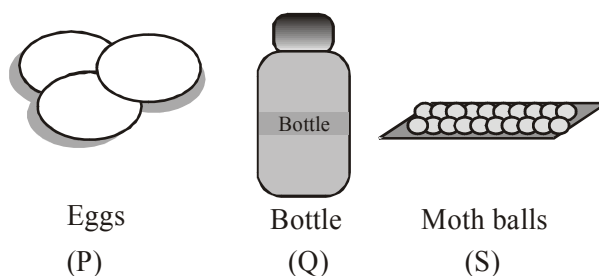


- (1) Convex mirror (2) Concave mirror
(3) Plane mirror (4) Nothing can be predicted

SECTION-B : CHEMISTRY

This section contains **11 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

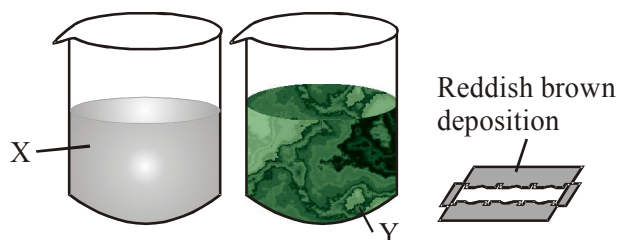
33. Which of these will react with oxygen to form an acidic oxide?
 (1) Sodium (2) Sulphur
 (3) Calcium (4) Zinc
34. Which of the following is true for acids ?
 (1) Bitter and change red litmus blue.
 (2) Sour and change red litmus blue.
 (3) Sour and change blue litmus red.
 (4) Bitter and change blue litmus red.
35. Which of the following are chemical changes?
 (i) Decaying of wood
 (ii) Burning of wood
 (iii) Growth of wood in a tree.
 (iv) Hammering of a nail into a piece of wood.
 (1) (i) & (ii) (2) (ii) & (iv)
 (3) (iii) & (iv) (4) (i), (ii) & (iii)
36. Three substances given below are kept in open for a few days and some changes were observed.



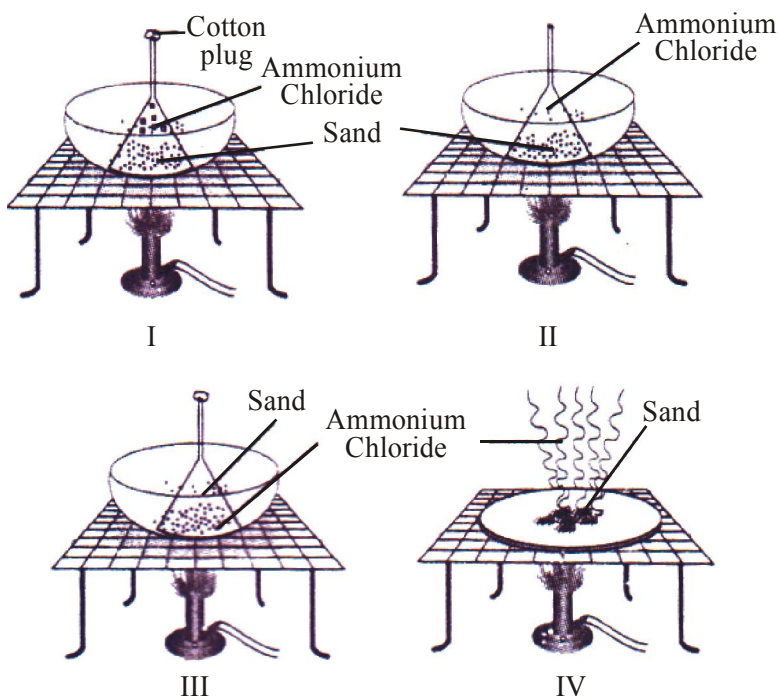
Which of the substances will show chemical changes ?

- (1) Eggs (2) Plastic bottle
 (3) Both Eggs and moth balls (4) None of these
37. Which of the following statement is **INCORRECT**?
 (1) H_2SO_4 is known as KING OF CHEMICALS.
 (2) Aqua Regia is a mixture of conc. HCl and conc. HNO_3 in the ratio of 3 : 1
 (3) The acid found in lemons is oxalic acid.
 (4) The characteristic properties of acids is due to the hydronium ion.

38. Rishabh was performing an experiment with a blue coloured solution (X) in a beaker. By mistake a shaving blade fell into the beaker. After half an hour, he found that the colour of the solution in beaker changed to green (Y). What could be the solutions X and Y respectively ?



- (1) Copper sulphate, Iron sulphate
(2) Iron sulphate, Copper sulphate
(3) Iron sulphate, Zinc sulphate
(4) Copper sulphate, Zinc sulphate
39. State which of the following is not likely to be an element.
- I. On heating it gives off a gas and leaves a residue.
II. Burns in air to form carbon dioxide and water.
III. Changes into solid at 273 K and to a gas at 373 K.
- (1) I (2) II and III
(3) I and III (4) I, II, III
40. A student is given a mixture containing sand and ammonium chloride. He is asked to separate these two components. The correct way to separate these two components is



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

41. Which of the following solids undergo sublimation upon heating ?
 (1) Sugar (2) NaCl
 (3) Ice (4) Camphor
42. Sunidhi was asked by her teacher to prepare a dilute sulphuric acid from concentrated sulphuric acid. What should she do ?
 (1) Add water to the acid
 (2) Add acid to the water
 (3) Add a base to the concentrated acid
 (4) Add an alkali to the concentrated acid
43. Match the following

Column I		Column II	
(a)	No more solution can be dissolved	(i)	Threshing
(b)	More solute can be dissolved	(ii)	Centrifugation
(c)	Conversion of water vapour into water	(iii)	Saturated solution
(d)	Removal of grain from stalk	(iv)	Unsaturated solution
(e)	Separation of cream from curd	(v)	Condensation

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

SECTION-C : BIOLOGY

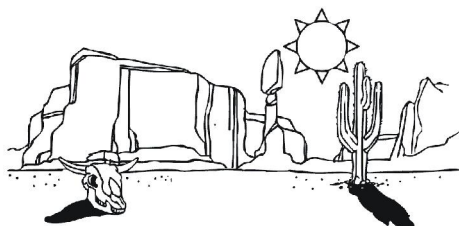
This section contains **12 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

44. Match Column I with Column II and choose the correct option.

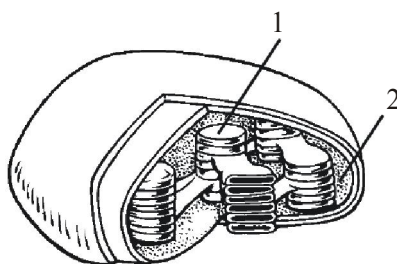
	Column I		Column II
P.	Insect	I.	Skin
Q.	Fishes	II.	Gills
R.	Earthworm	III.	Trachea
S.	Human	IV.	Lungs

- (1) P - III, Q - II, R - I, S - IV (2) P - I, Q - II, R - III, S - IV
 (3) P - IV, Q - III, R - II, S - I (4) P - III, Q - I, R - II, S - IV
45. The first compartment of cattle's stomach whose main function is to digest cellulose is
 (1) Rumen (2) Reticulum
 (3) Omasum (4) Abomasum
46. Which of the following best explains why many birds and mammals migrate during the winter?
 (1) To escape predators.
 (2) To reproduce in a more favourable environment.
 (3) To find a better environment in which to settle permanently.
 (4) To find a more favourable environment in which to hibernate.

47. Digestion of carbohydrate takes place in
- (1) Oesophagus and small intestine
 - (2) Stomach and large intestine
 - (3) Buccal cavity and small intestine
 - (4) Small intestine and large intestine
48. On what would an animal with a long digestive system and a large caecum probably feed on?
- (1) Insects
 - (2) Bacteria
 - (3) Plants
 - (4) Herbivores
49. Abhi fell down from a tricycle and got minor injuries on his body. He noticed that blood was coming out from the injuries but it stopped after sometime and a dark red clot was formed there. The clot is formed because of the presence of
- (1) Red blood cells
 - (2) Plasma
 - (3) White blood cells
 - (4) Platelets
50. If you chew on a piece of bread long enough, it will begin to taste sweet because
- (1) maltase is breaking down maltose
 - (2) lipases are forming fatty acids
 - (3) amylase is breaking down starches to disaccharides
 - (4) disaccharides are forming glucose
51. What type of plant would be best suited for the environment shown below?

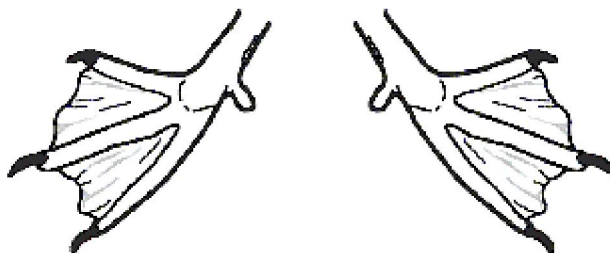


- (1) A large plant with large leaves
 - (2) A small plant with large leaves
 - (3) A large plant with no leaves
 - (4) A small plant with small and scaly leaves
52. Which reaction takes place in the thylakoid discs (1) of the chloroplast?



- (1) Carbon fixation
- (2) Light-dependent reaction
- (3) Light-independent reaction
- (4) Glycolysis

53. The following graphic shows a duck's feet. Which of the following explains how the structure of the feet enables the duck to survive in its environment ?



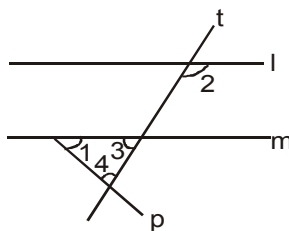
- (1) The number of toes on the foot enables the duck to capture prey.
 (2) The webbing on the feet enables the duck to move through water.
 (3) The shape of the foot enables the duck to walk to find sources of water.
 (4) The presence of claws on the feet enables the duck to glide through the air.
54. The transpiration in plants will be lowest when
 (1) There is high humidity in the atmosphere.
 (2) There is excess of water in the cell.
 (3) Environmental conditions are very dry.
 (4) There is high wind velocity.
55. Black bears have thick fur that traps air. How does this air insulate the bear in winter ?
 (1) The air reduces thermal (heat) energy flow to the environment.
 (2) The air produces thermal (heat) energy to keep the bear warm.
 (3) The air transforms chemical energy to thermal (heat) energy.
 (4) The air transfers thermal (heat) energy to the bear.

SECTION-D : MATHEMATICS

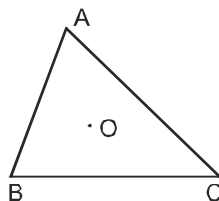
This section contains **25 Multiple Choice Questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

56. Of the three angles of a triangle, one is twice the smallest and another is three times the smallest. Find the smallest angle.
 (1) 30° (2) 40° (3) 35° (4) 50°
57. $(-27) \times (-16) + (-27) \times (-14) = ?$
 (1) -810 (2) 810 (3) -54 (4) 54
58. How much pure alcohol must be added to 400 ml of a 15% solution to make its strength 32% ?
 (1) 40 ml (2) 125 ml (3) 100 ml (4) 150 ml
59. A man goes 10 m due east and then 24 m due north. Find his distance from the starting point.
 (1) 26 m (2) 25 m (3) 24 m (4) 27 m
60. If a, b, c are integers, such that $a > b$, then
 (1) $a \times c > b \times c$, if c is positive (2) $a \times c < b \times c$, if c is positive
 (3) $a \times c > b \times c$, if c is negative (4) None of these

61. In a $\triangle ABC$, AD is the altitude from A such that AD = 12 cm, BD = 9 cm and DC = 16 cm. Examine if $\triangle ABC$ is right angled at A ?
 (1) Yes (2) No
 (3) Cannot say (4) None of these
62. The weight of 34 bags of sugar is 3483.3 kg. If all bags weigh equally, find the weight of each bag.
 (1) 102.45 kg (2) 102 kg
 (3) 101.45 kg (4) 101 kg
63. In figure, line $l \parallel m$, $\angle 1 = 60^\circ$ and $\angle 2 = 100^\circ$, find $\angle 4$

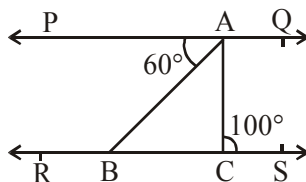


- (1) 80° (2) 30° (3) 50° (4) 40°
64. What should be subtracted from .1 to get .03 ?
 (1) .7 (2) .07 (3) .007 (4) None of these
65. A picture frame is 80 cm by 60 cm then its diagonal is
 (1) 75 cm (2) 95cm (3) 90 cm (4) 100 cm
66. Find two numbers such that one of them exceeds the other by 9 and their sum is 81.
 (1) 45, 36 (2) 36, 47 (3) 27, 36 (4) 54, 45
67. O is any point inside the $\triangle ABC$. Then which one is true.



- (1) $OA + OB + OC > \frac{1}{2}(AB + BC + CA)$
 (2) $OA + OB > AB$
 (3) $AB + BC + CA < 2(OA + OB + OC)$
 (4) All of these
68. If $x * y = x + y - x \times y$ then find $(-10) * 5$
 (1) 45 (2) 35
 (3) - 35 (4) - 45

69. Two poles of heights 6 m and 11 m stand on a plane ground. If the distance between their feet is 12 m, Find the distance between their tops.
(1) 13 m (2) 10 m (3) 9 m (4) 11 m
70. The value of $1 + \frac{1}{1 + \frac{1}{1 - \frac{1}{2}}}$ is -
(1) $\frac{3}{4}$ (2) $\frac{4}{3}$ (3) $\frac{5}{3}$ (4) None of these
71. Which of the following numbers would not have digit 1 at units place ?
(1) $(29)^2$ (2) $(41)^2$
(3) $(53)^2$ (4) $(69)^2$
72. Ages of two friends are in the ratio 2 : 1. If the sum of their ages is 51. Then their ages are
(1) 34 yrs, 20 yrs (2) 34 yrs, 17 yrs
(3) 20 yrs, 10 yrs (4) 30 yrs, 15 yrs
73. If the numbers 7, 14, 28 are in continued proportion, then the mean proportion between 7 and 28 is
(1) 7 (2) 14 (3) 28 (4) 196
74. The value of expression $10,000 \div \{(80 + 100 \div 5) \times 100\}$ is
(1) 1 (2) 2 (3) 3 (4) 4
75. If a rational number $\frac{x}{y} < 1$, where x and y are both positive integers, then which of the following is greater than 1 ?
(1) $\frac{x}{2y}$ (2) $\frac{x}{y^2}$ (3) $\frac{y}{x}$ (4) $x - y$
76. For what value of x, the mode of the following data is 11 ?
7, 9, 11, 17, 11, 19, 21, 9, x- 4.
(1) 11 (2) 15 (3) 7 (4) 12
77. In the given fig $PQ \parallel RS$, $\angle PAB = 60^\circ$ and $\angle ACS = 100^\circ$. Then $\angle BAC = ?$



- (1) 40° (2) 60° (3) 80° (4) 50°

78. The name of the figure which has 6 vertices, 9 edges and 5 faces is
 (1) cuboid (2) cube
 (3) cone (4) triangular prism
79. If the base of a triangle is halved and its height is doubled, then the area of the resulting triangle.
 (1) increases (2) decreases
 (3) doubles (4) remain same
80. A cistern can be filled by one tap in 4 hrs. and another tap in 6 hrs. How long will it take to fill the cistern if both taps are opened together?
 (1) $\frac{24}{5}$ (2) $\frac{10}{24}$ (3) $\frac{12}{5}$ (4) $\frac{14}{5}$

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	2	2	3	4	4	2	2	2	4	4	2	2	2	2	4	1	2	4	3	1
Que.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	4	1	3	2	3	3	3	1	3	3	1	2	2	3	4	4	3	1	4	1
Que.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	4	2	3	1	1	2	3	3	4	3	4	2	2	1	1	1	2	3	1	1
Que.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Ans.	1	1	4	2	4	1	4	1	1	2	3	2	2	1	3	2	1	4	4	3