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## SECTION-A : PHYSICS

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

1. Which of the following has kinetic energy?
(1) A sleeping boy
(2) A girl watching T.V.
(3) A moving car
(4) A student sitting in class
2. Match the entries of column-I with identical magnitudes in column-II :

| Column-I |  | Column-II |  |
| :--- | :--- | :--- | :--- |
| (A) | 5 cm test tube | (p) | 500 cm rope |
| (B) | 500 m distance | (q) | 0.5 km long bridge |
| (C) | 5 m ribbon | (r) | 50 mm pin |

(1) A-r, B-q, C-p
(2) A-r, B-p, C-q
(3) A-p, B-r, C-q
(4) A-q, B-p, C-r
3. Parul saw a scene in a movie in which all objects were floating (see figure). The scene could have been filmed

(1) on a mountain
(2) in a spaceship
(3) on north pole
(4) in a desert
4. A non luminous body may behave as a luminous body when
(1) it is cooled
(2) it is melted
(3) it is heated
(4) it is evaporated
5. Earth appears to be the only planet that can support life as we know it. Which of the following gives Earth the conditions needed to support life?
(1) the shape of the orbit
(2) the closeness of Mars
(3) the presence of a moon
(4) the distance from the Sun
6. Forces exerted by boy A and boy B are the examples of (a) $\qquad$ and (b) $\qquad$ respectively.

(1) pull, pull
(2) push, push
(3) pull, push
(4) push, pull
7. The diagram below shows the Sun and the Earth. Letter X shows a location on the Earth's surface.


After 12 hours it will be
(1) day at location $X$.
(2) night at location X .
(3) summer at location $X$.
(4) winter at location $X$.
8. Pinhole camera is used to produce image of a large tree. It produces
(1) an erect and small image
(2) an erect and same size image
(3) an inverted and small image
(4) an erect and enlarged image
9. The distance between Bengaluru and Mysore is usually expressed in units of:
(1) Decametre
(2) Metre
(3) Centimetre
(4) Kilometre
10. A torch is shone onto a star-shaped card which forms a shadow on the screen behind the card. What will happen to the shadow if the torch is moved away from the card ?

(1) It decreases in size.
(2) It increases in size.
(3) It first becomes smaller and then again becomes larger.
(4) It changes its shape.
11. Ravi wants to measure the circumference of his water bottle. Which of the following instruments can be used to determine the circumference?
(1) A 15 cm scale and a meter scale
(2) A meter scale
(3) Hand span and meter scale
(4) Thread and meter scale

## 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.
12. Nitesh scratched four different materials $P, Q, R$ and $S$ with a piece of glass. He observed that he could make a scratch only on two materials Q and S . What is the reason behind this observation?
(1) Because glass is a transparent material.
(2) Because glass is a softer material than $Q$ and $S$.
(3) Because glass is a harder material than P and R .
(4) Because glass is a harder material than Q and S .
13. Which one of the following is insoluble in water?
(1) Oxygen
(2) Sugar
(3) Salt
(4) Sawdust
14. Which process is used for separating salt from sea water?
(1) Filtration
(2) Evaporation
(3) Sedimentation
(4) Decantation
15. In how many physical states does water mainly exist?
(1) 2
(2) 3
(3) 4
(4) 5
16. Some mixtures are given below
(i) Kidney beans and chick peas
(ii) Wheat grains and Pulses
(iii) Rice flakes and Potatoes
(iv) Stone and Dust.

Which of the above mixtures can be separated using winnowing?
(1) ii \& iv
(2) ii \& iii
(3) i \& iii
(4) iii \& iv
17. The diagram below shows the effect of a river on an area over many years.


Which process caused valley to form?
(1) Condensation
(2) Deposition
(3) Erosion
(4) Evaporation
18. Arrange the following in increasing order of the thickness of Yarn, Fibre, Thread
(1) Yarn $<$ Fibre $<$ Thread
(2) Fibre $<$ Thread $<$ Yarn
(3) Fibre $<$ Yarn $<$ Thread
(4) Fibre $<$ Thread $=$ Yarn.
19. $\qquad$ is the fertile component in soil.
(1) Gravel
(2) Humus
(3) Moisture
(4) Air
20. Which of the following is a property of gas?
(1) Gases can be compressed easily.
(2) Particles of gases do not move.
(3) Gases fill up the entire space of a container.
(4) Both (1) and (3)
21. Separation of cream from curd can be done by which process?
(1) Loading
(2) Churning
(3) Threshing
(4) Crystallisation
22. We generally make ropes from coir and jute fibres. Coir is obtained from coconut. Which of the following is TRUE about the part of the plant, from which we get coir and jute fibres?

Coir
(1) Fruit
(2) Fruit
(3) Stem
(4) Stem

## Jute fibre

Fruit
Stem
Fruit
Stem

## SECTION-C : BIOLOGY

This section contains 11 Multiple Choice Questions. Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.
23. Most producers obtain energy primarily from
(1) water
(2) sun
(3) nutrients in the soil
(4) decomposers
24. Identify the female reproductive part of a flower, which receives the pollen grains during pollination.

(1) Ovary
(2) Stigma
(3) Style
(4) None of these
25. Pick the odd one out.
(1) Heart
(2) Blood
(3) Blood vessel
(4) Oesophagus
26. Tomato is a $\qquad$ and its stem is $\qquad$
(1) Shrub; Brown and Thick (2) Herb; Green and tender
(3) Tree; Green and tender
(4) Herb; Brown and thick
27. Rickets is the softening of bones in young children due to deficiency or inadequate metabolism of vitamin D.

This is what some students said about how the body gets the required amount of vitamin $D$.
Atul : Vitamin D in sunlight is absorbed by the body.
Salim : Vitamin D in food is absorbed by the digestive system.
Dennis : Vitamin D is synthesized by the skin when exposed to sunlight.
Who is correct?
(1) Only Atul
(2) Only Atul and Salim
(3) Only Salim and Dennis
(4) All - Atul, Salim and Dennis
28. Complete the table by selecting correct option.

| Vitamin | Function | Deficiency disease |
| :---: | :---: | :---: |
| A | Healthy skin and eyes | Night blindness |
| Vitamin D | Healthy bones | B |
| Vitamin K | C | Hemorrhage |

(1) A-Vitamin-B, B- Scurvy, C-Growth of bones
(2) A-Vitamin-A, B- Beriberi, C-Keeps mouth and skin healthy
(3) A-Vitamin-C, B- Rickets, C-Increase the Immune system
(4) A-Vitamin-A, B- Rickets, C-Blood clotting process
29. I am the life line of a person's body. I am the king of circulatory system. I pump the blood throughout the body and if I stop working, the person will die. Who am I?
(1) Heart
(2) Brain
(3) Kidney
(4) Lungs
30. Following test is carried out to confirm. $\qquad$ in food.

(1) Glucose
(2) Protein
(3) Fat
(4) Starch
31. From which part of plant sugarcane can be grown?
(1) Stems
(2) Roots
(3) Leaves
(4) Flowers
32. Which one is the correct food chain?
(1) Eagle $\rightarrow$ Snake $\rightarrow$ Grasshopper $\rightarrow$ Grass $\rightarrow$ Frog
(2) Frog $\rightarrow$ Snake $\rightarrow$ Eagle $\rightarrow$ Grasshopper $\rightarrow$ Grass
(3) Grasshopper $\rightarrow$ Grass $\rightarrow$ Snake $\rightarrow$ Frog $\rightarrow$ Eagle
(4) Grass $\rightarrow$ Grasshopper $\rightarrow$ Frog $\rightarrow$ Snake $\rightarrow$ Eagle
33. Which of the following are good sources of roughage ?
(1) Milk, meat, soyabean, grains
(2) Egg, curd, pulses, fruit juice
(3) Broccoli, fruits, carrot, spinach
(4) Onion, yoghurt, cheese, pulses

## 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.
34. Find the maximum number of triangles that can be drawn by connecting the following dots if $B, C, D$ and $E$ are collinear.

(1) 3
(2) 6
(3) 7
(4) 2
35. In the followig pictograph, number of video games sold in week has been shown.
(Scale $\mathfrak{S}_{5}=7$ video games)

| Monday |  |
| :---: | :---: |
| Tuesday |  |
| Wednesday |  |
| Thursday |  |
| Friday |  |
| Saturday |  |

How many video games were sold during first four days of the week?
(1) 120
(2) 140
(3) 160
(4) 180
36. A plastic pipe 50 metres long weighs 4 kilograms. What is the weight of a similar pipe that is 20 metres long?
(1) 1.5 kg
(2) 1.6 kg
(3) 1.8 kg
(4) 2.2 kg
37. In the diagram, each of the integer 1 to 9 is to be placed in one circle so that the integers in every straight row of three joined circles add to 18 . Find the value of the number represented by X .

(1) 4
(2) 5
(3) 7
(4) 8

(1) 40
(2) 50
(3) 12
(4) 70
39. Saurabh has organised his birthday party and invited his friends. If he is planning to give 150 gm of cake and 350 ml of cold-drink to each guest. How much quantity of cake and cold-drink he need for 50 guest?
(1) 7.5 kg cake and 17.5 litres cold-drink
(2) 5 kg cake and 22.5 litres cold-drink
(3) 8 kg cake and 12.5 litres cold-drink
(4) 12 kg cake and 17.5 litres cold-drink
40. If $+2=15$ and $<9$ but then find the value of $<$ if both symbols stand for whole numbers.
(1) 9
(2) 7
(3) 11
(4) 16
41. An auditorium had 240 rows of chairs. If there are 170 chairs in each row, how many persons can be seated in the auditorium?
(1) 40800
(2) 408
(3) 41000
(4) 410
42. Ram mixed 3.6 kg of hazelnuts with 0.75 kg of cashews. He packed the mixture equally into 5 boxes. What is the mass of each box ?
(1) 14.25 kg
(2) 4.35 kg
(3) 0.87 kg
(4) 0.72 kg
43. The following pictograph shows the number of Maruti Vans manufactured during a week. Read the table and answer the question given below :


Find the total number of maruti vans manufactured in a week.
(1) 2300
(2) 4600
(3) 23
(4) 46
44. Which of the following integer is closest to zero?
(1) -1101
(2) 1011
(3) -1010
(4) -1001
45. What part of total area is shaded.

(1) $\frac{4}{15}$
(2) $\frac{8}{32}$
(3) $\frac{7}{16}$
(4) $\frac{10}{32}$
46. $12+\frac{2}{10}+\frac{4}{1000}=$
(1) 12.204
(2) 12.240
(3) 12.402
(4) 12.240
47. $3 \times(3+3) \div 3$ equals
(1) 6
(2) 3
(3) 2
(4) 12
48. In the diagram, what is the area of the shaded triangle?

(1) $6.5 \mathrm{~cm}^{2}$
(2) $7.5 \mathrm{~cm}^{2}$
(3) $15 \mathrm{~cm}^{2}$
(4) $13 \mathrm{~cm}^{2}$
49. Simplify: $3 \frac{1}{2}+\frac{15}{4}-\overline{2 \frac{3}{4}-1 \frac{5}{8}}$
(1) $8 \frac{1}{6}$
(2) $6 \frac{1}{8}$
(3) $\frac{50}{8}$
(4) $\frac{31}{6}$
50. The following pictograph shows the number of autos manufactured during a week. Read the table and answer the question given below :


On which day were the maximum number of autos manufactured?
(1) Monday
(2) Tuesday
(3) Thursday
(4) Friday
51. Simplify : $[4.6-\{3.2-(1.8-\overline{2.2-1.8})\}]$
(1) 1.8
(2) 2.8
(3) 3.8
(4) 4.8
52. Find the area of shaded region in given figure.

(1) $225 \mathrm{~m}^{2}$
(2) $150 \mathrm{~m}^{2}$
(3) $180 \mathrm{~m}^{2}$
(4) $200 \mathrm{~m}^{2}$
53. 0.35 equals
(1) $\frac{700}{20}$
(2) $\frac{7}{20}$
(3) $\frac{70}{20}$
(4) $\frac{7}{200}$
54. $1004 \times 1390$ equals
(1) $13,95,460$
(2) $13,95,560$
(3) $12,95,560$
(4) $11,56,500$
55. The product divided by the multiplicand equals the
(1) Multiplier
(2) Smaller number
(3) Larger number
(4) None of these
56. Amos is reading a 400 page book. On Monday, he reads 40 pages. On each day after the first, the number of pages that he reads is 20 more than on the previous day. Amos finishes the book on
(1) Friday
(2) Saturday
(3) Sunday
(4) Tuesday
57. The angle between two parallel line is
(1) $0^{\circ}$
(2) $60^{\circ}$
(3) $90^{\circ}$
(4) $30^{\circ}$
58. Subtract 9 km 75 m from 16 km 20 m .
(1) 6 km
(2) 6.945 km
(3) 5.965 km
(4) 6.941 km

## SECTION-E : MENTAL ABILITY

This section contains 22 Multiple Choice Questions. Each question has four choices (1), (2), (3) and (4) out of which ONLY ONE is correct.
59. Which of the following words will come at second position if all the words are arranged alphabetically?
(1) Boast
(2) Broad
(3) Board
(4) Bull
60. Two men and two women are playing cards and are seated North, East, South and West of a table. No women is facing East. Persons sitting opposite to each other are not of the same sex. One man is facing south, which direction ladies are facing?
(1) North and East
(2) East and West
(3) South and East
(4) North and West
61. Following question are based on the following letters of English alphabet. Study the pattern and then answer these questions.

| A | B | C | D | E | F | G | H | I | J | K | L | M |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| N | O | P | Q | R | S | T | U | V | W | X | Y | Z |

If second half of the above alphabets is written in reverse order, which letter would be $5^{\text {th }}$ from right of $9^{\text {th }}$ letter from left?
(1) Z
(2) M
(3) N
(4) P
62. Below you are served with four different type of Venn diagrams that indicate a definite relationship between Tennis, Rugby and Soccer. You need to find out the diagram which is the most relevant
(1)

(2)

(3)

(4)

63. In a certain code, "APPROVAL" is writen as "LAVORPPA". How would "ROUTINE" be written in that code?
(1) ENITUOR
(2) ROUENIT
(3) UORENIT
(4) ENITOUR
64. Sara is facing towards West and turns through $45^{\circ}$ clockwise, again $180^{\circ}$ clockwise. In which direction is she facing now?
(1) North-West
(2) North-East
(3) South-East
(4) South-West
65. If in the English alphabet, every alternate letter from B onwards is written in small letters while others are written in capitals, then how will the $3^{\text {rd }}$ day from Tuesday will be coded?
(1) WeDNeSdAY
(2) WEdnESdAY
(3) THURSdAY
(4) frIdAY
66. If 'Mountain' is called 'Star', 'Star' is called 'Flower', 'Flower' is called 'Paper' and 'Paper' is called 'Pen', then on which Honey bee sits to prepare honey?
(1) Flowers
(2) Star
(3) Paper
(4) Pen
67. Megha, Priya, Jayanti, Bhavya, Ritu, Teena and Garima are sitting around a circle facing centre and playing Antakshari. Bhavya is third to the left of Jayanti who is second to the left of Megha. Priya is third to the left of Bhavya and second to the right of Ritu. Teena is not an immediate neighbour of Megha. Who is between Bhavya and Megha?
(1) Ritu
(2) Jayanti
(3) Garima
(4) Priya
68. Study the following information carefully to answer the below question
i. $\mathrm{P}, \mathrm{Q}, \mathrm{R}, \mathrm{S}, \mathrm{T}, \mathrm{U}$ and V are sitting along a circle and facing at the centre.
ii. P is between T and S .
iii. U is between Q and V .
iv. Q is 2 nd to the right of T .

Where is V sitting ?
(1) 2nd to the left of P
(2) 2nd to the left of Q
(3) Immediate left of U
(4) None of these
69. In a certain code, RAIN is written as "* \% $\div$ \#", INK is written as " $\div$ \# $\$$ ". How is "R A N K" written in that code?
(1) $* \% \div \#$
(2) $\div \#$ \$
(3) \# \# **
(4) $* \% \# \$$
70. Find the missing number in the given series.

(1) 33
(2) 34
(3) 36
(4) 37
71. Which answer figure will be the correct mirror image the question figure ?

Question figure
Answer figure


(1)
(2)
(3)
(4)
72. In Alpha-numeric series, letters, and numbers (or digits) together are placed in a specific pattern. Find the correct alternative from the given options.

| 20 AB | 40 CD | 60 EF | 80 GH | $?$ |
| :--- | :--- | :--- | :--- | :--- |

(1) 100IJ
(2) 100 JI
(3) 120 IJ
(4) 120 JI
73. In the given figure the circle represents children who like Burger, the triangle represents children who like Pizza, reactangle represents children who like Sandwich


Which region represents children who like burger and sandwich both but not pizza ?
(1) 1
(2) 2
(3) 3
(4) 6
74. In the following question, choose the correct water-image of the given word from amongst the four alternative (1), (2), (3) and (4) given along with it.

## DISC

(1) CSID
(2) JSIO
(3) DIZC
(4) DISC
75. Riya walks 2 km towards East and then she turns to South and walks 4 km . Again she turns to East and walks 3 km after this she turns to north and walks 4 km . Now, how far is she from starting point?
(1) 5 km
(2) 7 km
(3) 6 km
(4) 4 km
76. Find the water image of following figure.

(1)

(2)

(3)

(4)

77. Which one comes next?

(1) 15
(2) 20
(3) 25
(4) 30
78. Select the correct mirror image of figure (X).

(X)
(1)

(2)

(3)

(4)

79. If in a certain code TRACTOR is coded as ARTCROT. How is SCOOTER written in that code?
(1) RTEAOTO
(2) CSOOETR
(3) OCSTORE
(4) OCSORET
80. Find the missing term :
$2,5,11,23,47$, ?
(1) 53
(2) 95
(3) 84
(4) 66

## ANSWER KEY

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

