MATRIX OLYMPIAD 2021–22

Class 8ᵗʰ

Total Questions : 120   **Maximum Marks : 480**   **Time : 3 Hrs.**

PAPER PATTERN & MARKING SCHEME									
Subject	**Reasoning**		**Physics**		**Chemistry**		**Biology**	**Maths**	
Question type	SCQ	INT	SCQ	INT	SCQ	INT	SCQ	SCQ	INT
No. of ques.	20	10	10	5	10	5	15	30	15
Marks per ques.	4	4	4	4	4	4	4	4	4
Negative marks per ques.	1	0	1	0	1	0	1	1	0
SCQ - Single correct answer type questions & INT - Integer answer type questions									

INSTRUCTIONS – 1:

A.   The question paper consists of **5 parts (1. Reasoning & Mental ability 2. Physics 3. Chemistry 4. Biology 5. Mathematics).** Please fill the **OMR** answer Sheet accordingly and carefully.

B.   This questions paper contains **85 single correct type questions** and **35 Integer answer type questions.**

C.   Please ensure that the Question Paper you have received contains All the questions in each Section and Pages. If you found some mistake like missing questions or pages then contact immediately to the Invigilator.

INSTRUCTIONS – 2:

1.   Part – 1 contains **20 Single correct type questions** and **10 Integer type questions.**

2.   Part – 2 and 3 contains **10 Single correct type questions** and **5 Integer type questions.**

3.   Part – 4 contains **15 Single correct type questions.**

4.   Part – 5 contains **30 Single correct type questions** and **15 Integer type questions.**

5.   Indicate the correct answer for each question by filling appropriate bubble in your answer sheet.

6.   Use of Calculator, Log Table, Slide Rule and Mobile is not allowed.

OMR filling instructions for SCQ.   **OMR filling instructions for INT.**

INSTRUCTIONS
1. "Think before your ink".
2. Marking should be done with Blue/Black Ball Point Pen only.
3. Darken only one circle for each question as shown in Example Below.

WRONG METHODS	CORRECT METHOD

4. If more than one circle is darkened or if the response is marked in any other way as shown "WRONG" above, it shall be treated as wrong way of marking.
5. Make the marks only in the spaces provided.
6. Carefully tear off the duplicate copy of the OMR without tampering the Original.
7. Please do not make any stray marks on the answer sheet.

Part – 1 contains 20 Single correct type questions and **10 Integer type questions.**

Question No. 1 – 20 are of Single Correct Answer Type Question.

Four options are given in each question out of which only **one** option is correct.

1. In the following question four figures are given. One of them does not co-relate with the rest. Find out the diffrent figure.

(A)   (B)   (C)   (D)
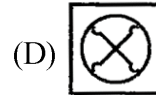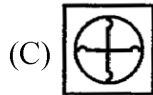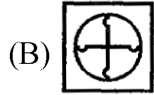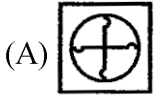
2. In the following question there is some relationship between the two figures on the left of (: :) the same relationship exists between the two terms on the right, of which one is missing. Find the missing one from the given alternatives.

Question – Figures

Answer – Figures

(A)   (B)   (C)   (D)
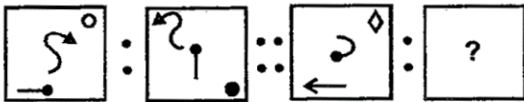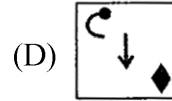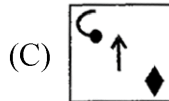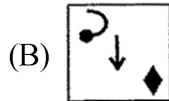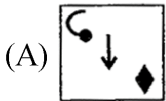
Space for Rough Work

3.   The following question consists of four problem figure. This problem figure form a series. Find out the one figure from the answer figures that will continue the series.

Problem Figures

Answer Figures

(A)   (B)   (C)   (D)
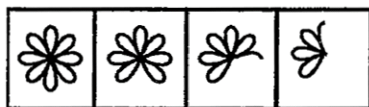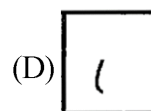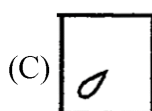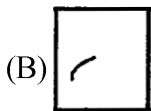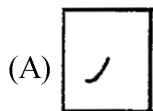
4.   In the following question, choose the alternative figure in which the question figure (X) is embedded.

(X)

(A)   (B)   (C)   (D)
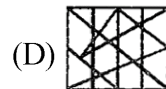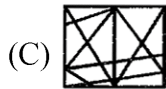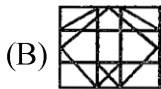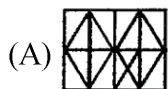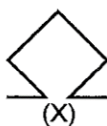
Space for Rough Work

5. How many triangles are in the given figure ?

(A) 21   (B) 22   (C) 23   (D) 24

6. The following question is related to paper cutting. The question that follow contain a set of three figures X, Y and Z, showing a sequence of folding of a piece of paper. Fig. (Z) shown the manner in which the folded paper has been cut. These three figures are followed by four answer figures A, B, C and D from which you have to choose a figure which would most closely resemble the unfolded from of fig. (Z).

Sequence of folding the paper
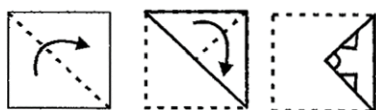
X   Y   Z

(A)   (B)   (C)   (D)

Space for Rough Work

7. In the following question, choose the correct water–image from alternatives A, B, C and D of the word / figure (X).

(X)

(A)   (B)   (C)   (D)
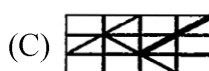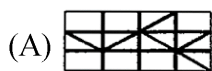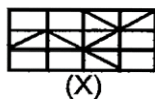
8. The number opposite to 1 is :

(A) 4   (B) 6   (C) 5   (D) 3

9. At what time are the hands of a clock together between 5 O'clock and 6 O'clock?

(A) $33\frac{3}{11}$ minute past 5.   (B) $28\frac{3}{11}$ minute past 5.

(C) $27\frac{3}{11}$ minute past 5.   (D) $26\frac{3}{11}$ minute past 5.

Space for Rough Work

10. Find the day of the week on 15 August, 1947.
    (A) Tuesday   (B) Friday   (C) Wednesday   (D) Thursday

11. In the following question, arrange the given words in a meaningful sequence and then choose the most approprite sequence from amongst the alternatives provided in below question.
    1. Honey   2. Flower   3. Bee   4. Wax
    (A) 1, 3, 4, 2   (B) 2, 1, 4, 3   (C) 2, 3, 1, 4   (D) 4, 3, 2, 1

12. In the following question three out of four alternatives contain alphabet placed in a particular form. Find the one that does not belong to the group.
    (A) YVSR   (B) TQNM   (C) KHFE   (D) NKHG

13. B is father of C but C is not son of B. What is the relation of C with B ?
    (A) Sister   (B) Brother   (C) Daughter   (D) Nephew

14. Which sequence of letters when placed at the blanks one after the other will complete the given letter series ?
    _ a a b b _ a b b a _ b
    (A) b a b   (B) a b a   (C) b b a   (D) b a a

Space for Rough Work

15. Find the missing letters :

    LO, IL, FI, CF, ?

    (A) ZB   (B) AB   (C) ZC   (D) ZO

16. **Heart** is related to **Blood** in the same way as **Lung** is related to.

    (A) Oxygen   (B) Chest   (C) Purification   (D) Circulation

17. How many c's are there in between two consonants in the following series ?

    c a b c d c d c e c f c o c i c j c k c c k

    (A) 4   (B) 5   (C) 6   (D) 11

18. Anil left home and cycled 10 km southwards, turned right and cycled 5 km & turned right and cycled 10 km and turend left and cycled 10 km. How many kilometer will he have to cycle to reach his home straight ?

    (A) 10 km   (B) 15 km   (C) 20 km   (D) 25 km

19. Find missing term : 92, 23, 27, 9, 12, 6, ?

    (A) 8   (B) 12   (C) 18   (D) 20

20. If 5.4 = 225, 3.5 = 69 and 1.4 = 41, then the value of 2.1 is.

    (A) 21   (B) 24   (C) 12   (D) 42

Space for Rough Work

Question No. 21 – 30 are of Integer Answer Type Question.

Answer of these question will come from **00** to **99**.

21. Replace the question mark with the correct option 102, 97, ?, 87, 82

22. How many 2's come just after M in the following series ?

L M M 2 B 2 2 B M 2 4 M 7 T

23. How many times in a day, are the hands of a clock in straight line but opposite in direction ?

24. If 20th September in a year is Wednesday, the number of Fridays in that month is

25. If Atul 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 28 boys in the line?

26. How many pairs of letters in the word **BRIGHTER** have as many letters between them in the word as in the alphabet ?

Space for Rough Work

27. If '<' means '–', '>' means '+', '=' means '×' and '$' means '÷', then what will be the value of 27 > 81 $ 9 < 6 ?

28. Kashish goes 30 metres North, then turns right and walks 40 metres, then again turns right and walks 20 metres, then again turns right and walks 40 metres. How many metres is he from his original position?

29. If in a certain code I = 9 and GIRL = 46, then BOY = ?

Directions : Find the missing terms.

30.

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     ┌────┐              ┌────┐              ┌────┐
     │ 12 │              │ 8  │              │ 7  │
  ┌──┼────┼──┐        ┌──┼────┼──┐        ┌──┼────┼──┐
  │ 5│ 51 │ 9│        │ 7│ 44 │ 4│        │ 9│ 37 │ 6│
  └──┼────┼──┘        └──┼────┼──┘        └──┼────┼──┘
     │ 8  │              │ 9  │              │ ?  │
     └────┘              └────┘              └────┘
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(A) 3   (B) 4   (C) 5   (D) 13

Space for Rough Work

Part – 2 contains 10 Single correct type questions and **5 Integer type questions.**

Question No. 31 – 40 are of Single Correct Answer Type Question.

Four options are given in each question out of which only **one** option is correct.

31. Krish conducted an experiment with shadow sticks. The pictures below were drawn from his observations of the Sun's movement across the sky. Which picture shows the time of the day when the Sun was highest in the sky?

(A) (B) (C) (D)
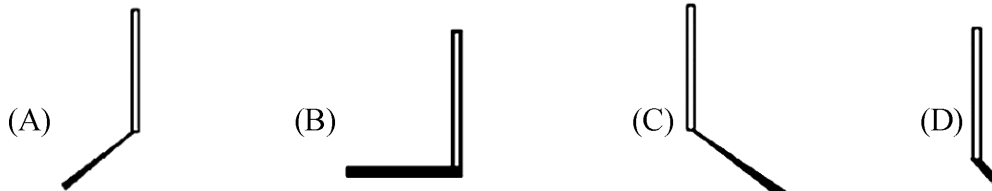
32. A student rubbed a piece of silk over a balloon filled with air. The student put the balloon and the piece of silk down on a table.

Which will most likely happen when the student moves the balloon near the silk?

(A) The balloon will float towards the ceiling. (B) The silk will fall to the floor.

(C) The balloon will be attracted to the silk. (D) The silk will be repelled by the balloon.

Space for Rough Work

33.   Which of the following pictures shows the appearance of the Moon when a solar eclipse occurs?

(A)   (B)   (C)   (D)
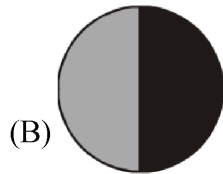
Waning Moon   Quarter Moon   Full Moon   New Moon
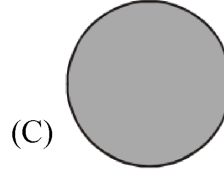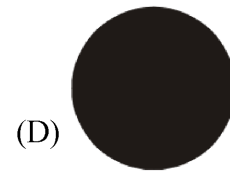
34.   Which part of the bulb is an electric insulator ?

(A) P   (B) Q   (C) R   (D) S

Space for Rough Work

35. Which of the following energy conversions takes place in the figure given here ?
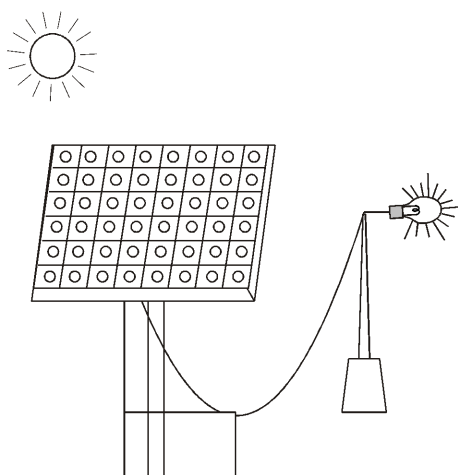
(A) Solar $\to$ electrical

(B) Solar $\to$ light $\to$ heat

(C) Solar $\to$ electrical $\to$ light

(D) Solar $\to$ electrical $\to$ light $\to$ heat

36. Which of the following cells are used in mobile phones :

(A) Dry cells

(B) Zinc cells

(C) Button cells

(D) Lithium ion cells

Space for Rough Work

37. Which of the following labelled parts of the dry cell represents its negative terminal ?
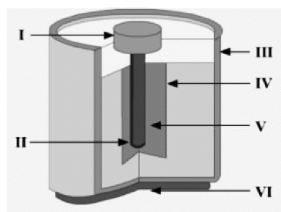
(A) II   (B) III   (C) V   (D) VI

38. Match the column

Column I

P. Hurricane

Q. Typhoon

R. When filled in bicycle tube, keeps it inflated

S. Difference in air pressure in nature

Column II

1. Created due to difference in temperature

2. Name of cyclone in U.S.A.

3. Alternative name of cyclone

4. Air

Codes :

(A) P-1,Q-2,R-3,S-4   (B) P-2,Q-3,R-4,S-1

(C) P-3,Q-2,R-1,S-4   (D) P-4,Q-3,R-2,S-1

Space for Rough Work

39. Which of the given occurences is (are) natural phenomenon (phenomena) caused by electricity due to rubbing
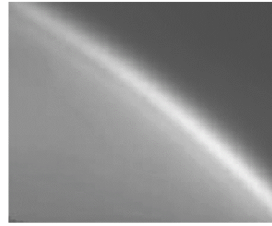
I : Lighting   II : Rainbow

(A) I   (B) II

(C) I and II   (D) None of these

40. Ashima looks into the mirror and sees the reflection of the picture behind her.

Image seen by Seema in the mirror
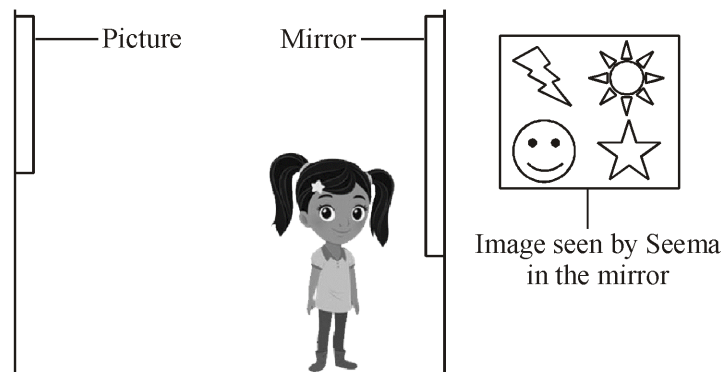
Which of the following is the picture that is behind Ashima ?

(A)   (B)   (C)   (D)

Space for Rough Work

Question No. 41 – 45 are of Integer Answer Type Question.

Answer of these question will come from **00** to **99**.

41. 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.

42. The distance between Martha's house and her school is 15 km. A pastry shop is located exactly midway between the house and the school. She goes to the school from her house in the morning. While returning home in the afternoon, she goes to the pastry shop. What is the total displacement covered by Martha when she reaches the pastry shop ?

43. Ten coins are placed one above the other. Their total height was 4 cm and 6 mm. The thickness of each coin is.

44. The normal body temperature in the clinical thermometer on the Celsius scale represents which one of the following temperature?

45. The bulb in the circuit given here does not glow. Which labelled part is responsible for this ?
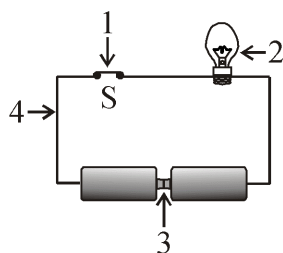
Space for Rough Work

Part – 3 contains 10 Single correct type questions and **5 Integer type questions.**

Question No. 46 – 55 are of Single Correct Answer Type Question.

Four options are given in each question out of which only **one** option is correct.

46. What is the colour of turmeric indicator in a basic solution?

     (A) Green   (B) Red   (C) Yellow   (D) Rink

47. The acidic waste of factories, before disposing off in river is treated with

     (A) HCl   (B) Bleaching powder   (C) Bases   (D) Salts

48. Diamond fibre is another name of

     (A) Angara wool   (B) Mohair   (C) Pashmina   (D) Cashmere wool

49. The eggs are laid by a female silk with in

     (A) 1000 (thousands)   (B) Tens   (C) Units   (D) Hundreds

50. The process of removing flake from sheep in known as :

     (A) Shearing   (B) Scouring   (C) Sorting   (D) Throwing

51. Which of following metals burns with a dazzling white flame?

     (A) zinc   (B) Coffer   (C) Iron   (D) Magnesia's

Space for Rough Work

52. A chemical reaction in which magnesium ribbon burns can be represented as :

(A) Mg + Oxygen   Magnesium oxide

(B) Magnesium + Oxygen   Magnesium hydroxide

(C) Magnesium + Water   Magnesium hydroxide

(D) Magnesium + Oxygen + Water   Magnesium hydroxide

53. The full form of WWTP is :

(A) World wide transport programme

(B) Wastewater treatment want

(C) World works talent want.

(D) None of these

54. Which of following trees absorbs all the surplus wastewater rabidly and releases fore water values into the atmosphere?

(A) Mango   (B) Eucalyptus   (C) Need   (D) Palm

55. World water day is celebrated on :

(A) 23 March   (B) 22 March   (C) 21 March   (D) 24 March

Space for Rough Work

Question No. 56 – 60 are of Integer Answer Type Question.

Answer of these question will come from **00** to **99**.

56. Which of the following are weak acids?

H2CO3, H2SO4, HNO3, HCOOH, H2SO3

57. How many types of fibres on basis of source?

58. Which of following are example of lexical change?

Clotting of Blood, Rusting of iron, Rhetosyn thesis Digestion of food, Melting of wax, Preaching of Glass hone, Formation of dew.

59. Which of following is net water borne disease?

Heart attack, Crueller, Dysentery, Hepatitis Rabies.

60. Which of following is step of wastewater treatment?

Ration, evaporation, Condensation, Contain nation, Exhaustions.

Space for Rough Work

Part – 4 contains 15 Single correct type questions.

Question No. 61 – 75 are of Single Correct Answer Type Question.

Four options are given in each question out of which only **one** option is correct.

61. Priyanka took a destarched potted plant and set-up an experiment as shown in the figure. She left the plant in sunlight for few hours and then tested the leaves X and Y for starch. Leaf X did not give starch test while leaf Y showed presence of starch.
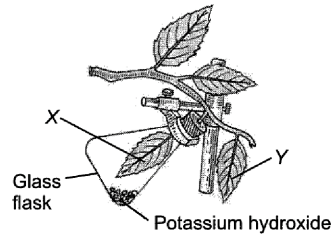
What is proved by this experiment?

(A) Chlorophyll is necessary for photosynthesis.

(B) Carbon dioxide is necessary for photosynthesis.

(C) Light is necessary for photosynthesis.

(D) Oxygen is given out during photosynthesis.

62. The given figure shows the movement of food through the oesophagus. This movement is aided by the muscles of the oesophagus in a wave-like action called:
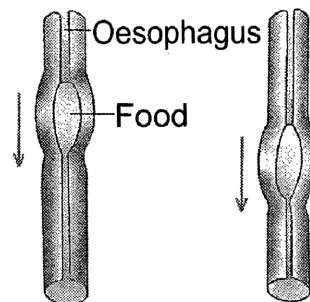
(A) Diapedesis   (B) Peristalsis

(C) Rumination   (D) Muscularisation

Space for Rough Work

63. The given diagram shows a destarched, variegated leaf, partly covered by black paper. The plant is placed in bright light for serveral hours.

Four discs are then cut from the leaf in the positions shown and are tested for starch. Which discs do/does not contain starch?

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

(C) 2 only　　　　　　　　　　　　　　(D) 3 and 4 only

64. The steps of the digestive process are listed below in a random order.

(i) Water and some salts from undigested food are absorbed.

(ii) Food is liquefied; breakdown of proteins begins.

(iii) Food is moistened; breakdown of starch begins.

(iv) Proteins, carbohydrates, and fats break down; nutrients are majorly absorbed into the bloodstream.

Select the option that gives the correct order of these events as food passes through the human digestive tract.

(A) (ii), (iv), (i), (iii)　　　　　　　　(B) (iv), (ii), (iii), (i)

(C) (i), (iii), (ii), (iv)　　　　　　　　(D) (iii), (ii), (iv), (i)

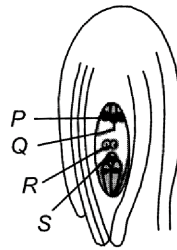*Space for Rough Work*

65. Read the given paragarph carefully.

The female silk __(i)__ lays eggs. When an egg hatches. a tiny caterpillar called silkworm or __(ii)__ crawls out. It feeds on leaves and grows. When it is ready to enter the next stage in its life cycle, it secretes a fibre made of __(iii)__ which hardens on exposure to air. This is he silk fibre. It covers itself completely with this fibre, to form a __(iv)__ . At this stage, the larva is called a __(v)__, which grows and changes inside the covering and, a few weeks later comes out as an adult.

Select the correct sequence of words to complete the above paragraph.

	(i)	(ii)	(iii)	(iv)	(v)
(A)	Moth	Larva	Protein	Pura	Cocoon
(B)	Larva	Moth	Carbonhydrate	Pura	Cocoon
(C)	Moth	Larva	Protein	Cocoon	Pupa
(D)	Moth	Larva	Fat	Cocoon	Pupa

66. Refer to the given figure.
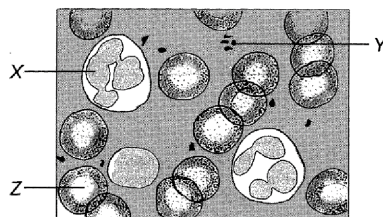
Which of the labelled parts is the egg cell?

(A) P (B) Q (C) R (D) S

Space for Rough Work

67. Refer to the given figuers of blood cells and select the correct statements regarding X, Y and Z.

(i) X plays a key role in transporting waste carbon dioxide from the tissuses to the lungs.

(ii) The pigment present in Z absorbs oxygen and transports it to the cells all over the body.

(iii) X is able to move on their own.

(iv) Y helps the blood to clot whenever there is a wound on the body.

(v) Y is important part of our immune system.

(vi) Z produces special protein substances, i.e. antibodies that protect us from infection.

(A) (i), (ii), (iii), (iv) and (vi) only   (B) (ii), (iii) and (iv) only

(C) (iii), (iv) and (v) only   (D) (i), (ii), (iii) and (iv) only

68. Formation of coal from plant matter is called :

(A) Destructive distillation   (B) Carbonization

(C) Both (A) & (B)   (D) None of these

Space for Rough Work

69. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
P. Partial parasitic plant	1. Dionaea
Q. Total parasitic plant	2. Cuscuta
R. Insectivorous plant	3. Mistletoe
S. Symbiosis	4. Mycorrhiza
T. Saprotroph	5. Pseudomonas

(A) P-2; Q-3; R-1; S-4; T-5

(B) P-3; Q-2; R-1; S-4; T-5
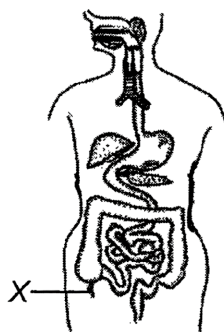
(C) P-1; Q-2; R-4; S-3; T-5

(D) P-3; Q-5; R-2; S-1; T-4

70. Refer to the given figure of human digestive system. What is X here and what is its function?

(A) Small intestine-Absorbs nutrients from digested food

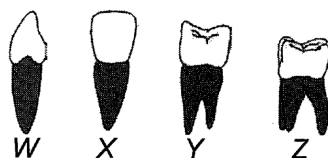(B) Stomach-Breaks down food using acids and enzymes

(C) Appendix-Has no specific function in the body

(D) Rectum-Temporary storage of faeces before being expelled out of the body
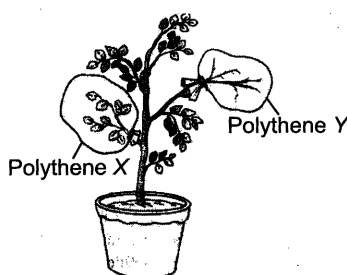
Space for Rough Work

71. The given figures show different types of teeth. Which of these is used for biting and cutting of food?

W   X   Y   Z

(A) X

(B) W

(C) Both W and Y

(D) Both Y and Z

72. Tanmay took a potted, well watered plant and set-up an experiment as shown in figure.

Polythene Y

Polythene X

Then, he put it in the sunlight for few hours. Which of the following options is correct regarding his observation?

(A) Water droplets are visible in polythene X as transpiration takes place through leaves.

(B) Water droplets are visible in polythene Y as transpiration takes through stems.

(C) Water droplets are visible in polythene X as photosynthesis occurs in leaves.

(D) Water droplets are visible in polythene Y as photosynthesis occurs in stem

Space for Rough Work

73. Select the incorrect match.
   (i) Ammonotelism - Sponges, Hydra, Cartilaginous fish, Leech, Crocodile
   (ii) Ureotelism - Frogs, Toads, Bony fish, Turtles, Man
   (iii) Uricotelism - Cockroach, Pigeon, Beetle, Lizard, Snake
   (A) (i) and (ii) only   (B) (ii) and (iii) only   (C) (iii) only   (D) (i), (ii) and (iii)

74. The given table lists some plants and their reproductive structures.

Plants	Reproductive structures
Been plant	Seeds
X	Spores
Onion	Y

   What should be at X and Y?
   (A) X - Fern, Y - Spores   (B) X - Pineapple, Y - Corms
   (C) X - Moss, Y - Bulbs   (D) X - Moss, Y - Leaves

75. The host for malaria causing protozoan is:
   (A) Anapheles mosquito   (B) The cow
   (C) The earthworm   (D) The tapeworm

Space for Rough Work

Part – 5 contains 30 Single correct type questions and 15 Integer type questions.

Question No. 76 – 105 are of Single Correct Answer Type Question.

Four options are given in each question out of which only **one** option is correct.

76. The square root of $0.64 - 2 \times 0.48 + 0.36$ is _____.

(A) 0.8 　　　　(B) 0.2 　　　　(C) $\sqrt{2}$ 　　　　(D) $\sqrt{26}$

77. Which of the following is equal to one ?

(A) $\dfrac{(0.11)^2}{(1.1)^2 \times 0.1}$ 　　(B) $\dfrac{(1.1)^2}{(11)^2 \times 0.1}$ 　　(C) $\dfrac{(0.011)^2}{(1.1)^2 \times (0.01)^2}$ 　　(D) $\dfrac{(0.11)^2}{(11)^2 \times 0.01}$

78. The sum of the present ages of a father and his son is 99 years. When the father was as old as his son is now, his age was four times age of the son at that time. The ratio of the present ages of the son and the father is –

(A) 3 : 7 　　　　(B) 3 : 8 　　　　(C) 4 : 9 　　　　(D) 4 : 7

79. In fig. ABCD and AEFG are both parallelogram. If $\angle C = 60°$. Then $\angle GFE$ and $\angle AGF$ are :
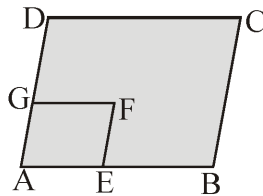
(A) 60°, 120° 　　　(B) 45°, 90° 　　　(C) 60°, 60° 　　　(D) None of these
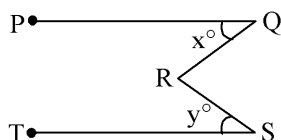
Space for Rough Work

80. Swarn deposited Rs. 7200 in a finance company which pays 15% interest per year. The amount she is expected to get after $4\frac{1}{2}$ year is :

(A) Rs. 13000   (B) Rs. 12000   (C) Rs. 12065   (D) Rs. 12060

81. Which of the following algebraic expressions is not a polynomial ?

(A) $\frac{17}{2}x^2 + x - 3$ (B) $\sqrt{7}x^3 + 3x^{2/3} - 8$ (C) $\frac{3}{x^{-1}} + x^2 + \frac{1}{x^{-3}}$ (D) 0

82. A rope makes 260 rounds of a cylinder with base radius 20 cm. How many times can it go round a cylinder with base radius 26 cm ?

(A) 130   (B) 300   (C) 200   (D) 150

83. The value of $\dfrac{2^{m+3} \times 3^{2m-n} \times 5^{m+n+3}\, 6^{n+1}}{6^{m+1} \times 10^{n+3} \times 15^{m}}$ is equal to -

(A) 0   (B) 1   (C) 2^m (D) None of these

84. The value of $0.\overline{4}$ is:

(A) $\frac{4}{10}$ (B) $\frac{4}{9}$ (C) $\frac{4}{100}$ (D) $\frac{9}{4}$

85. HCF and LCM of two expressions are (x–6) and (x+6)(x–1)(x–6) respectively. If one of the expressions is $x^2 - 7x + 6$, then the other expression is :

(A) (x – 6)(x–1)   (B) (x + 6)(x–1)   (C) (x + 6)(x–6)   (D) $(x^2 - 7x+6)(x–1)$

Space for Rough Work

86. If $a + b + c = 0$, then the value of $a^3 + b^3 + c^3$ is

    (A) $3 (a + b + c)$ (B) $3 (abc)$

    (C) $3 (ab + bc + ca)$ (D) None of these

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

    (A) $x + y = 13$ (B) $x – y = 13$ (C) $2x + 3y = 13$ (D) $x^2 + y^2 = 15$

88. In the figure below (not to scale), $\overline{PQ} \parallel \overline{TS}$, reflex $\angle QRS = 300°$ and $x – y = 30°$. The measure of y will be -


    (A) $25°$ (B) $15°$ (C) $20°$ (D) $30°$

89. $\left(\dfrac{3}{2}\right)^{-3}$ is equal to :-

    (A) $\dfrac{8}{27}$ (B) $\dfrac{27}{8}$ (C) $\left(\dfrac{27}{8}\right)^{-1}$ (D) (A) & (C) both

90. If $a : b = 3 : 4$ and $b : c = 5 : 9$, then $a : b : c$ is :

    (A) $15 : 20 : 36$ (B) $20 : 36 : 15$ (C) $3 : 20 : 9$ (D) None of these

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Space for Rough Work

91. In a single throw of a dice, the probability of getting a multiple of 3 is :

(A) 1/2   (B) 1/3   (C) 1/6   (D) 2/3

92. Choose the rational number which does not lie between rational numbers $-\dfrac{2}{5}$ and $-\dfrac{1}{5}$:

(A) $-\dfrac{1}{4}$ (B) $-\dfrac{3}{20}$ (C) $-\dfrac{3}{10}$ (D) $-\dfrac{7}{20}$

93. ABCD is a parallelogram. CE is the height from C to AB and CF also the height from C to AD. If AB = 12.9 cm and CE = 8.7 cm. Find the area of the parallelogram ABCD
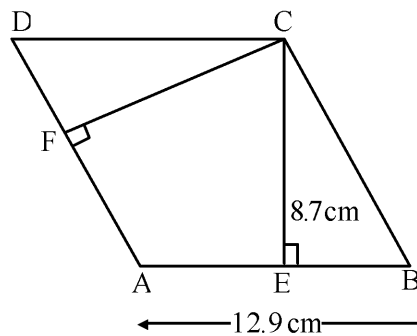
(A) 112.23 sq cm   (B) 212.23 sq cm   (C) 312.23 sq cm   (D) 412.23 sq cm

94. Five times the price of a pen is 17 more than three times its price. Find the price of the pen.

(A) 17.50   (B) 7.50   (C) 8.50   (D) None of these

Space for Rough Work

95.   The weight of 34 bags of sugar is 3483.3 kg. If all bags weigh equally, find the weight of each bag.
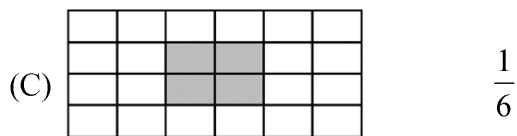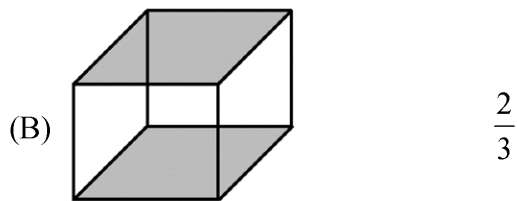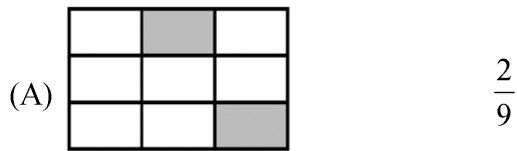
(A) 102.45 kg   (B) 102 kg   (C) 101.45 kg   (D) 101 kg

96.   A picture frame is 80 cm by 60 cm then its diagonal is

(A) 75 cm   (B) 95cm   (C) 90 cm   (D) 100 cm

97.   Select the correct match.

Figure   **Fraction of unshaded part**

(A)

$\dfrac{2}{9}$

(B)

$\dfrac{2}{3}$

(C)

$\dfrac{1}{6}$

(D)

$\dfrac{2}{3}$

*Space for Rough Work*

98. By selling an old radio set for Rs. 500, I earn a profit of 25%. Then my profit is

(A) Rs. 50   (B) Rs. 100   (C) Rs. 20   (D) Rs. 12.50

99. The axis on which the point (0, 4) lie :

(A) Positive x-axis   (B) Negative x-axis   (C) Positive y-axis   (D) negative y-axis

100. Find the additive inverse of the number – 9.

(A) 32   (B) –14   (C) –32   (D) None of these

101. 60% of the books in library are fictional books. There are 1200 fictional books in the library. What is the total number of books in the library?

(A) 2000   (B) 1500   (C) 2100   (D) 1800

102. The rational number $\dfrac{-8}{35}$ is divided by a number and the result is $\dfrac{-4}{5}$. What is the number?

(A) $\dfrac{5}{7}$ (B) $\dfrac{3}{7}$ (C) $\dfrac{2}{7}$ (D) $\dfrac{1}{7}$

Space for Rough Work

103. Find the area of the shaded region.
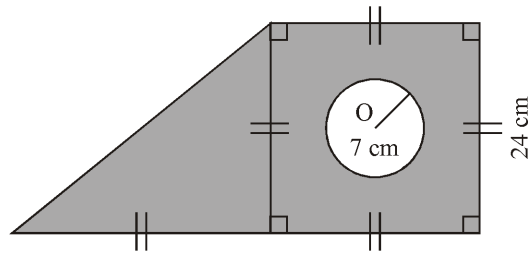
(A) 710 cm^2 (B) 695 cm^2 (C) 717 cm^2 (D) 749 cm^2

104. A cone, standing on its base, would appear in the top view as a

(A) Circle   (B) Triangle   (C) Rectangle   (D) None of these

105. If $\Delta EFG \cong \Delta PQR$ and GE is the hypotenuse in ΔEFG, then right angle in ΔPQR is

(A) $\angle P$ (B) $\angle Q$ (C) $\angle R$ (D) Can't be determined

Space for Rough Work

**Question No. 106 – 120 are of Integer Answer Type Question.**

Answer of these question will come from **00** to **99**.

106. Evaluate : $\dfrac{8-[5-(-3+2)]\div 2}{|5-3|-|5-8|\div 3}$

107. A number lying between 10 and 100 is seven times the sum of its digits. If 9 is subtracted from it, the digits of the number are reversed. Then the number is –
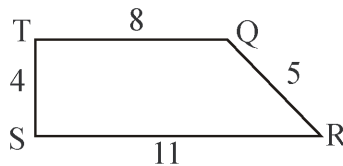
108. If the diagonals of a rhombus are 8 cm and 6 cm respectively, then the perimeter of the rhombus is :

109. In the given figure (PQ is diameter), x is equal to (in degree) –
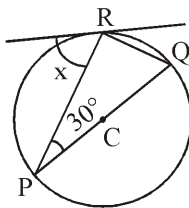
110. If the number 91876x2 is completely divisible by 8 then the smallest whole number in place of x will be :

111. What is the area of trapezoid QRST in square units ?

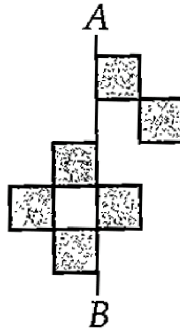
Space for Rough Work

112.   What will be the unit digit of the squares of the number 81

113.   If the median of $\frac{x}{5}, x, \frac{x}{4}, \frac{x}{2}$ and $\frac{x}{3}$ (where x > 0) is 8, then the value of $\frac{x}{2}$ would be.

114.   A number is multiplied by 3 and 7 is taken away from the product to get the answer 17. What is the number?

115.   If an angle $\frac{360}{k}$, which is two fifth of its supplement. Then find out the value of k.

Space for Rough Work

116. What is the least number of squares that must be added so that the line AB becomes a line of symmetry?

117. The pie chart shows the participants from four schools P, Q, R and S taking part in a competition. Given that there are 21 participants from school S, find the number of participants from school R.
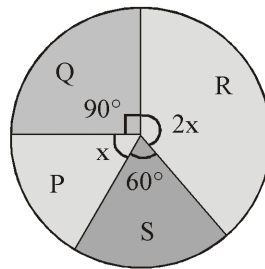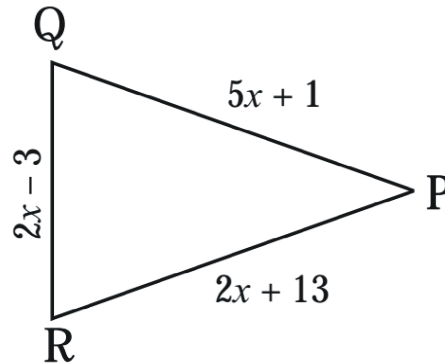

Space for Rough Work

118. If $\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{1}{c} = 1$ and abc = 2, then find $ab^2c^2 + a^2bc^2 + a^2b^2c$.

119. In the given figure, the given lengths of ΔPQR are in centimetres. If PQ = PR, find the length of QR.

Q

$5x + 1$

$2x - 3$

P

$2x + 13$

R

120. 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.

Space for Rough Work