ST. MARGARET SR. SEC. SCHOOL

SAMPLE PAPER 2024-25
SUBJECT: MATHEMATICS
CLASS: VIII

Time: 2.5 Hr **M.M: 60**

SECTION-A

(Q1 to Q15 – MCQ Questions of 1 mark each)

Write correct option along with answer

1. A number of the form $\frac{p}{q}$ is said to be a rational number if
   (a) p & q are integers
   (b) p & q are integers, q # 0
   (c) p & q are integers, p # 0
   (d) p & q are integers, p # 0, q # 0
2. What is the probability of choosing a vowel from the alphabets?
   (a) $\frac{21}{26}$ (b) $\frac{5}{26}$ (c) $\frac{1}{26}$ (d) $\frac{3}{26}$
3. $(-8)^{2} \div (-8)^{5}$ =
   (a) $(-8)^{-3}$ (b) $(8)^{3}$ (c) $(-8)^{3}$ (d) $(8)^{-3}$
4. Multiplicative inverse of $\left(\frac{-1}{2} + \frac{3}{2}\right)$ is
   (a) -1 (b) 1 (c) $\left(\frac{1}{2} - \frac{3}{2}\right)$ (d) $\left(\frac{-1}{2} + \frac{2}{3}\right)$
5. The quantity of oil in liters that can be stored in a tank which is the form of a cylinder with r=1.5m and h=7m is
   (a) 49000 L (b) 49500 L (c) 4950000 L (d) 4095 L
6. Standard form of 0.00000742 is
   (a) 7.42×10^{6} (b) 7.42×10^{-6} (c) 742×10^{8} (d) 742×10^{-8}
7. Which of the following numbers would have digit 6 at units place.
   (a) 19^{2} (b) 24^{2} (c) 33^{2} (d) 17^{2}
8. Pythagorean triplet whose one member is 6 is:
   (a) (5, 6, 10) (b) (8, 6, 12) (c) (12, 4, 6) (d) (6, 12, 24)
9. The area of rhombus whose diagonals are of length 10cm and 8.2cm is:
   (a) $82cm^{2}$ (b) $100cm^{2}$ (c) $123cm^{2}$ (d) $41cm^{2}$
10. Value of $2^{0} + 3^{0}$ is:
    (a) 5 (b) 1 (c) 2 (d) $\frac{1}{26}$
11. Which of the following number cannot be a perfect square?
    (a) 1478 (b) 5041 (c) 1600 (d) 144
12. The probability of drawing a green ball from a box containing 3 black, 6 red and 5 blue balls is:
    (a) $\frac{1}{2}$ (b) 1 (c) $\frac{2}{3}$ (d) 0
13. The side of a cubical box with surface are of 600 cm^{2} is:
    (a) 10cm (b) 100cm (c) 6cm (d) 60cm

14. A geometric representation showing the relationship between a whole and its parts is a
    (a) Pie Chart (b) Tally Marks (c) Bar Graph (d) Pictograph
15. The ratio of 5m to 20km
    (a) 4:1 (b) 1:4000 (c) 1:250 (d) 250:1

SECTION-B
(Q16 to Q22 carry 2 marks each)

16. Simplify: $(2^{-1} X 4^{-1}) \div 2^{-2}$
17. The volume of a box is 13400 cm^3. The area of its base is 670 cm^2. Find the height of the box.
18. Find the smallest number by which 1008 should be multiplied to get a perfect square.
19. Find the curved surface area of a closed cylinder whose radius of the base is 3.5cm and height 16cm.
20. Find compound interest on `20,000 for 2 years at 8% per annum compounded annually.
21. Find value on dividing $\frac{15}{7}$ by additive inverse of $\frac{14}{15}$
22. Find square root of 0.1764 by division method.

SECTION-C
(Q23 TO Q27 carry 3 marks each)

23. A dice is rolled once. What is the probability that the number on top will be
    (a) prime number (b) less than 1 (c) multiple of 2
24. Daniel is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15m, 10m and 7m respectively. From each can of paint 50m^2 of area is painted. How many cans of paint will be need to paint the same.
25. A rectangular paper of width 14cm is rolled along its width and a cylinder of radius 20cm is formed. Find the volume of the cylinder.
26. The floor of a building consists of 3000 tiles which are rhombus shaped and each of its diagonals are 45cm and 30cm in length. Find the total cost of polishing the floor, if the cost per m^2 is ₹4.
27. Draw the pie chart showing the following information. The table shows the different activities preferred by a group of people.

Item	Food	Hobby	Recreation	Saving
Percent	25	20	40	15

SECTION-D
(Q28 to Q30 carry 4 marks each)

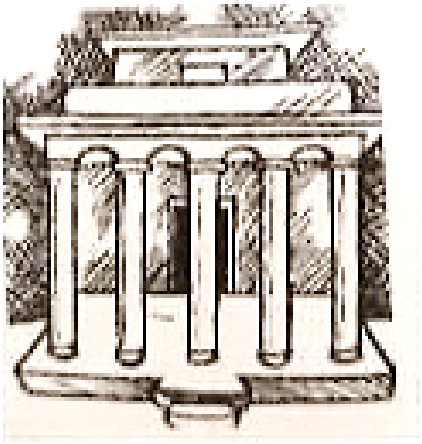
28. Find the square root of the following using long division method.
    (a) 12544 (b) 97344
29. The dimensions of a living room are 8m x 6m x 4.5m. It has one door measuring 3m x 2m and two windows each measuring 2m x 1m. It is required to get the interior walls of the room painted. Find the area of walls to be painted.
30. Simplify using laws of exponents:-

$$\frac{25\, x\, t^{-4}}{5^{-3}\, x\, 10\, x\, t^{-8}} \; (t \neq 0)$$

Section-E (4 Marks)

CASE STUDY

31. Ram went to a building. In that building there were 24 cylindrical pillars. The radius and height of each pillar was 28 cm and 4 m respectively. The rate of painting the curved surface area is `8 per square metre.



a) Find the curved surface area of a pillar.
b) Find the curved surface area of 24 pillars.
c) Find the cost of painting all the pillars.