ST. MARGARET SR. SEC. SCHOOL
SAMPLE PAPER - 2024-25
SUBJECT: MATHEMATICS
CLASS: VIII

Time: 2.5 hrs. **M.M.: 60**

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

Write correct option along with its answer.

1. Find the height of a cuboid whose volume is 600cm^3, length is 20cm and breadth is 10 cm.
   (a)4 cm (b)10 cm (c) 3 cm (d) 2 cm
2. How many natural numbers lie between 18^2 and 19^2?
   (a) 30 (b) 37 (c) 35 (d) 36
3. If the diagonals of a quadrilateral bisect each other at right angles, it will be
   (a) Rhombus (b) Trapezium (c) Rectangle (d) Kite
4. Linear Equation in one variable has
   (a) only one variable with any power (b) only one term with a variable
   (c) only one variable with power one (d) only constant term
5. Which of the following is equal to $\left(\frac{3}{4}\right)^{-3}$?
   (a) $\left(\frac{3}{4}\right)^{-3}$ (b)$-\left(\frac{3}{4}\right)^{-3}$ (c) $\left(\frac{4}{3}\right)^{3}$ (d) $\left(\frac{-4}{3}\right)^{3}$
6. Which is the like term as 24a^{2}bc?
   (a) 13x8ax2bxcxa (b) 8x3xaxbxc (c) 3x8xaxbxcxc (d)3x8xaxbxbxc
7. Product of $4p,\ -7q^3,\ -7pq$ is
   (a) $196p^2q^4$ (b)$196pq^4$ (c)$-196p^2q^4$ (d)$196p^2q^3$
8. The number of sides of a regular polygon where each exterior angle has a measure of 45^0 is
   (a) 10 (b) 4 (c) 8 (d) 6
9. $\sqrt[3]{8000}\ is$
   (a) 490 (b) 20 (c) 40 (d)30
10. The standard form of 0.00000482 is
    (a) $482x10^6$ (b)$4.82x10^{-6}$ (c) $4.82x10^6$ (d)$48.2x10^7$
11. Which of the following number is not a perfect cube?
    (a) 216 (b) 1000 (c) 46656 (d) 100
12. The irreducible factorisation of $3a^3 + 6a$ is
    (a) $3a(a^2 + 2)$ (b) $3(a^3 + 2)$ (c) $a(3a^2 + 6)$ (d) $3 \times a \times a \times a + 2 \times 3 \times a$
13. The area of a rhombus is 240 cm^2 and one of the diagonals is 16cm.The other diagonal is:

(a) 15cm (b) 3840cm (c) 6cm (d) 30cm

14. If two quantities x and y vary directly with each other than
    (a) $\frac{x}{y}$ remains constant (b) x – y remains constant
    (c) x + y remains constant (d) $x \times y$ remains constant

15. The area of a rhombus is 240 cm^2 and one of the diagonals is 16cm.The other diagonal is:
    (a) 15cm (b) 3840cm (c) 6cm (d) 30cm

SECTION-B

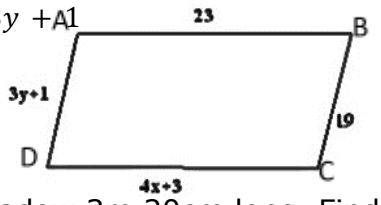
(Q16 to Q22 carry 2 marks each)

16. The angles of a quadrilateral area in the ratio 1:2:3:4. Find the smallest angle of a quadrilateral.
17. If 15 workers can build a wall in 48 hours, how many workers will be required to do the same work in 30 hours?
18. Add $7p(3q + 7p)\ and\ 8p(2p - 7q)$
19. Factorise : $25a^2 + 30a+9$
20. Find the height of a cylinder whose radius is 7 cm and total surface area is 968 cm^2.
21. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube?
22. Solve: $5x + \frac{7}{2} = \frac{3}{2}x - 14$

SECTION-C

(Q23 to Q27 carry 3 marks each)

23. In the given parallelogram, find x and y (lengths are in cm)
    if $AB = 23,\ BC = 19,\ CD = 4x + 3,\ AD = 3y + 1$



24. A 5m 60cm high vertical pole casts a shadow 3m 20cm long. Find at the same time
    (i) the length of the shadow cast by another pole 10m 50cm high.
    (ii) the height of a pole which casts a shadow 5m long.
25. Solve and check your result.
    $$\frac{6x+1}{3} + 1 = \frac{x-3}{6}$$
26. Divide $44(x^4 - 5x^3 - 24x^2)$ by $11x\ (x - 8)$
27. Subtract 4a (a +b + c) – 3b (a – b + c) from 4c (-a + b + c).

SECTION-D

(Q28 to Q30 carry 4 marks each)

28. Factorise the expression and then divide

$(m^2 - 14m - 32) \div (m + 2)$

29. Simplify using laws of exponents $\frac{16\,x\,10^2\,x\,64}{2^4\,x\,4^2}$

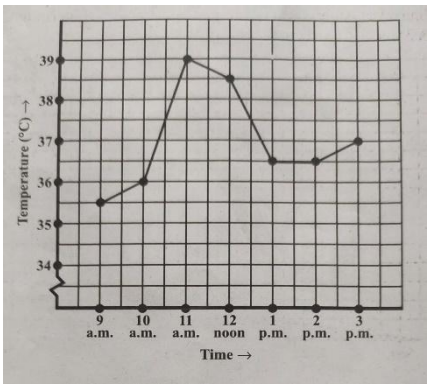
30. Draw a linear graph for the table given below which shows the number of male and female doctors in a city in different years.

Year	Number of male doctors	Number of female doctors
2010	650	700
2011	800	850
2012	950	900
2013	900	1100
2014	1100	1050

Section-E

Case study

Q31. The following graph shows the temperature of a patients in a hospital, recorded every hour.



(a)What was the patient's temperature at 1 p.m.?

(b)When was the patient's temperature 38.5℃ ?

(c)The patient's temperature was the same two times during the period given. What were these two times?

(d) What was the temperature at 1:30 p.m.?

(e) During which periods did the patients' temperature showed an upward trend?