ST. MARGARET SR. SEC. SCHOOL
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SAMPLE PAPER (2023-24)
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 answer.

Q1. Find the co-efficient of x^2 in the product of $(2-x)(5x-3)$

(a) -5 (b) 5 (c) -1 (d) -3

Q2. $\sqrt[3]{2 \times 2 \times 2 \times 5 \times 5 \times 5}$ is: -

(a) 2 (b) 5 (c) 8 (d) 10

Q3. $3^3 \times \frac{1}{27}$ is:

(a) 3^0 (b) 3^{-6} (c) 3^6 (d) 27^{-3}

Q4. The total non-square numbers that lie between square of 30 and 31 are:

(a) 59 (b) 60 (c) 61 (d) 62

Q5. The sum of the interior angles of a nonagon is:

(a) 1080^0 (b) 1440^0 (c) 1260^0 (d) 1620^0

Q6. The one's digit of the cube of the number 111 is

(a) 1 (b) 2 (c) 3 (d) 9

Q7. The standard form of 0.000064 is:

(a) $64x10^4$ (b) $64x10^{-4}$ (c) $634x10^5$ (d) $6.4x10^{-5}$

Q8. $(-1)^{51}$ is equal to

(a) -1 (b) 1 (c) 51 (d) -51

Q9. If 3 (t-3) = 5 (2t – 1), then t equals

(a) 2 (b) $\frac{1}{2}$ (c) -2 (d) $\frac{-4}{7}$

Q10. Factorise: $2x^3y^2 - 5x^2y^3$

(a) $xy(2x^2y - 5xy^2)$ (b) $x^2y^2(2x - 5y)$

(c) $2x^3y^2(1 - 5x^2y^3)$ (d) $x^2(2xy^2 - 5y^3)$

Q11. The side of a cubical box with surface area of 600 cm^2 is:

(a) 100cm (b) 10cm (c) 6cm (d) 600cm

Q12. The area of a rhombus is 240 cm^2 and one of the diagonals is 24 cm. The other diagonal is:

(a) 15cm (b) 3840cm (c) 6cm (d) 20cm

Q13. The value of x in $\frac{-2}{3}$ = 2x is

(a) $\frac{1}{3}$ (b) $x = -\frac{1}{3}$ (c) 3 (d) -3

Q14. The common factor of $8a^2b^4c^2$, $12a^4bc^4$ and $20a^3b^4$ is

(a) a^4b^4 (b) a^2b^2 (c) $4a^2b^2$ (d) $4a^2b$

Q15. The quotient of $12a^8b^8 \div (-4a^6b^6)$ is

(a) $3a^2b^2$ (b) $3a^2b$ (c) $3ab^2$ (d) $-3a^2b^2$

SECTION-B

(Q16 to Q22 carry 2 marks each)

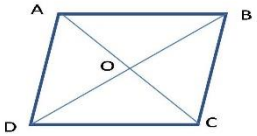
Q16. Find square root of 180625 by long division method.

Q17. The four angles of a quadrilateral are in the ratio 3:4:5:6. Find the angles.

Q18. Find the least number by which 2187 must be divided to make it a perfect cube.

Q19. ABCD is a parallelogram. OA= y+5, OB= x+ y, OC=22cm, OD=15cm.

Find x and y.



Q20. Find x: $4^{5x-3}=16^{3x-5}$

Q21. Factorise: $4x^2 - 8x + 4$

Q22. Solve: $5x + \frac{7}{2} = \frac{3}{2}x - 14$

SECTION-C

(Q23 to Q27 carry 3 marks each)

Q23. Simplify: $7x^2 + x(x + y - 1) - y(2x + 4) - 3(x - y - 4)$

Q24. A cuboid is of dimensions 60cm x 54cm x 30cm. How many small cubes with side 6cm can be placed in the given cuboid?

Q25. Solve: $m - \frac{m-1}{2} = 1 - \frac{m-2}{3}$

Q26. Divide: (x^2- 7x+12) by (x-3)

Q27. Evaluate: $\sqrt[3]{500}$ x $\sqrt[3]{128}$

SECTION-D

(Q28 to Q30 carry 4 marks each)

Q28. Draw a linear graph for the table given below which shows the quantity of petrol and its cost.

Number of litres of petrol	Number of female doctors
10	500
15	750
20	1000
25	1250

Q29. Suppose 2kg of sugar contains 9×10^6 crystals. How many sugar crystals are there in

(i) 5 kg of sugar

(ii) 1.2 kg of sugar

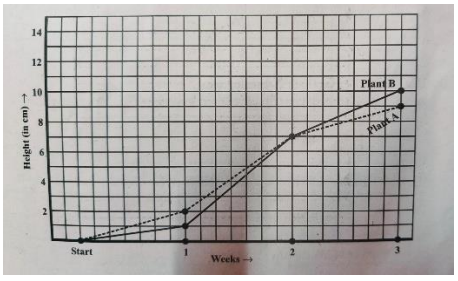
Q30. Factorise:

(i) $81x^4 - 625$ (ii) $a^2+4ab+4b^2$

Section-E

Case study

Q31. For an experiment in Botany, two different plants, Plant A and Plant B were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following graph.



(a)How high was Plant A after (i) 2 weeks (ii) 3 weeks?

(b) How high was Plant B after (i) 2 weeks (ii) 3 weeks?

(c) How much did Plant A during the 3rd weeks?

(d) During which week did Plant A grow most?

(e) During which week did Plant B grow least?

(f) How much did Plant B grow from the end of the 2nd week to the end of the 3rd week?