MODEL QUESTION SET

Class: VI   Maximum Marks: 100
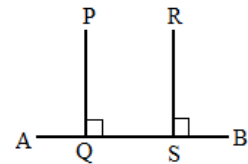Subject: Mathematics   Time: 3 hrs.

Candidates are required to answer in their own words as far as practicable. Credit shall be given to originality in expression, creativity and neatness in hand, not to rote learning.
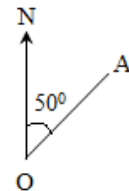
**Attempt all the questions.**

Group-A   [5 × (1+1) = 10]

1. (a) If PQ⊥AB and RS⊥AB, what is the relation between PQ and RS?

   (b) How many inches are there in 1 foot?

2. (a) On what axis does the point (0, 5) lie?

   (b) Write down the compass bearing A from O in angle.

3. (a) If V = {a, e, i, o, u}, find the value of n (V).

   (b) What is that is the frequency of 25 in the data 20, 25, 30, 25, 35, 25, 20, 35, 40, 20, 30?

4. (a) Multiply $4a^2 + 3b^2$ by 2ab.

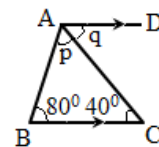   (b) Write the inequality represented by the given number line.
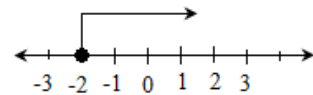
5. (a) What value of x satisfies the equation 5x = 55?

   (b) Find the value of $\sqrt{100}$.

Group-B   (17 × 2 = 34)

6. (a) Find the values of y and unknown angle from the figure given alongside.
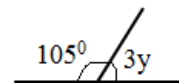
   (b) From the given figure, find the measures of p and q.
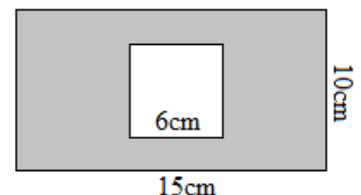


   (c) Find the sum of interior angles of a pentagon.

7. (a)   Construct an angle of 60^0 and bisect it.

   (b) A rectangular garden is 15m long and 10m broad. Find the length of wire required to fence it with 3 rounds.
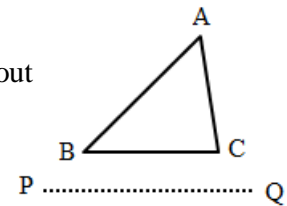
   (c) Calculate the area of shaded region in the figure alongside.

8. (a) Write the possible number the axes of symmetry of the given figure. Also, draw the axes of symmetry in the figure.
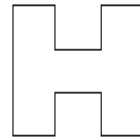
   (b)   Copy and draw the image of triangle ABC under reflection about the dotted line PQ.

    (c) Write all the possible subsets of the set A = {1, 2, 3}.

9. (a) In the polymerise chain reaction (PCR) test done among 1,450 suspected people of a place, $\frac{3}{10}$ of them were found having corona positive. Find the number of people who had corona positive and corona negative.

    (b) Out of 40 students of grade VI, 80% of them are attending their virtual classes in zoom regularly. Find the number of students who are not attending the virtual classes regularly.

    (c) The heights (in cm) of 8 children are given below. Find their average height.

        68cm, 80cm, 95cm, 100cm, 110cm, 115cm, 120cm, 124cm

10. (a) What should be added to 3u – 4v + 1 to get 8u + 5v – 6?

    (b) Divide: $(15p^4q^3 – 20p^2q^4) \div 5p^2q^2$

    (c) Solve: $\frac{3y-1}{5} = \frac{2y+3}{7}$

11. (a) If the cost of a dozen of banana is Rs 30 more than the cost of 7 bananas, find the cost of a banana.

    (b) Solve the inequality x + 2 > 5 and show in a number line.

Group-C   (14 × 4 = 56)

12. Construct an equilateral triangle ABC in which each side 4.5 cm.

13. Find the sizes of unknown angles from the given figure.
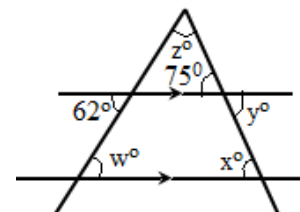
14. Plot the points A (1, 2) and B (5, 4) on a graph-paper and join them. Mark the mid-point M of segment AB and find the coordinates of mid-point M. Also, produce AB to the point N such that AB = BN and find the coordinates of point N.

15. If A = {x: x is a factor of 18} and B = {y: y is a prime number, y < 15}. List the elements and write with reasons whether the sets A and B are (i) equal or equivalent   (ii) overlapping or disjoint.

16. The students of a school were participated in the rally on 'Children's Day' with two banners of equal area. If the first banner is 8ft long and 3ft wide and the second banner was 6ft long, what was the width of the second banner? Find.

17. Simplify: $24 \div 2 \, [70 \div 5\{4 + (12 - 18 \div 6 \times 3)\}]$

18. Shashwat distributed 48 Snickers and 72 Cadburys equally to her friends on her birthday. Find the greatest number of her friends. How many Snickers and Cadburys did each get?

19. Mr. Chaudhary gained Rs 450 when a jacket was sold for Rs 2,250.
    (i) Find the cost price of the jacket.
    (ii) Find the gain percentage.

20. Ambika took a story-book from her school library. She completed reading $\dfrac{1}{6}$ part of the book in the first day, $\dfrac{3}{8}$ part in the second day and $\dfrac{5}{12}$ part in the third day. If she completed the whole book in the fourth day, what part of the book was left for the last day? Find.

21. There are 30 students in a class. The record of number of students who were present from Monday to Friday in the last week is given in the table below. Draw a bar graph to represent the data.
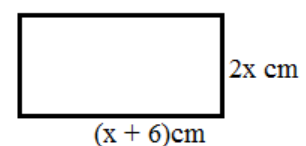
Days	Mon	Tue	Wed	Thurs	Fri
No. of present students	20	25	28	30	24

22. Subtract $2x - 3y + 5z$ from the sum of $4x + 2y - z$ and $x - y + 6z$

23. If $a = (2x - 3)$ and $b = (2x + 3)$, show that: $\dfrac{ab + 9}{4} = x^2$

24. Divide: $(x^2 + 5x + 6) \div (x + 3)$

25. If the perimeter of the given rectangle is 36cm, make an equation and solve for the value of x. Also, find the exact length and breadth of the rectangle.

2x cm
(x + 6)cm

The End