FMM   # FIRST MID TERM TEST - 2024
9 - STD   ## MATHEMATICS

Time : 1.30 Hrs   Marks : 50

PART -A

I   **Choose the correct answer.**   8 X 1 = 8

1. If A = {x, y, z} then the number of non - empty subsets of A is

   1) 8   2) 5   3) 6   4) 7

2. If B - A is, B then $A \cap B$ is

   1) A   2) B   3) $\cup$ 4) ϕ

3. Which of the following is true?   1) $A - B = A \cap B$

   2) $A - B = B - A$ 3) $(A \cup B)' = A' \cup B'$ 4) $(A \cap B)' = A' \cup B'$

4. In a city, 40% people like only one fruit, 35% people like only two fruits, 20% people like all the three fruits. How many percentage of people do not like any one of the above three fruits?

   1) 5   2) 8   3) 10   4) 15

5. Which of the following is an irrational number?

   1) $\sqrt{25}$ 2) $\sqrt{\frac{9}{4}}$ 3) $\frac{7}{11}$ 4) π

6. $0.\overline{34} + 0.3\overline{4} =$ 1) $0.6\overline{87}$ 2) $0.\overline{68}$ 3) $0.6\overline{8}$ 4) $0.68\overline{7}$

7. $4\sqrt{7} \times 2\sqrt{3} =$

   1) $6\sqrt{10}$ 2) $8\sqrt{21}$ 3) $8\sqrt{10}$ 4) $6\sqrt{21}$

8. The length and breadth of a rectangle plot are 5×10^5 and 4×10^3 metres respectively. Its area is

   1) 9×10^1 m^2 2) 9×10^9 m^2 3) 2×10^{10} m^2 4) 20×10^{20} m^2

PART - B

II   **Answer any six questions. (Q.No. 6 is compulsory)**   6 X 2 = 12

9. Write the set of letters of the following words in Roster form

   i) ASSESSMENT   ii) PRINCIPAL

10. If S = {square, rectangle, circle, rhombus, triangle}, list the elements of the following subsets of S. (i) The set of shapes which have 4 equal sides.

11. If A = {-3, -2, 1, 4} and B = {0, 1, 2, 4} find (i) A – B (ii) B – A.

12. Find any three rational number between $\frac{-7}{11}$ and $\frac{2}{11}$.

13. Convert the decimal number 0.35 in the form of $\frac{p}{q}$ where p and q are integers.

14. Write the number 625 in the from 5^n.

15. Represent the number 0.0009000002 in scientific notation.

16. Draw Venn diagram and shade the region representing the set(A – B)$^|$.

PART - C

III Answer any six questions. (Q.No. 24 is compulsory).   6 x 5 = 30

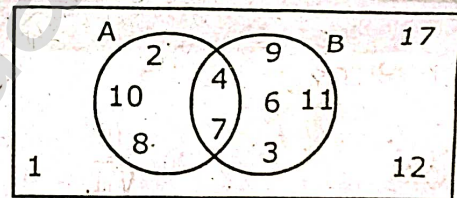17. Using the given Venn diagram, write the elements of

   (i) $A \cup B$ (ii) $A \cap B$ (iii) A - B   (iv) $A^|$ (v) $\cup$

18. Verify

$$A-(B\cup C) =(A-B)\cap (A-C)$$

Using Venn diagrams.

19. In a school, all students play either Hockey or Cricket or both. 300 play Hockey, 250 play cricket and 110 play both games. Find (i) the number of students who play only Hockey (ii) the number of students who play only cricket. (iii) the total number of students in the school.

20. Represent $\sqrt{9.3}$ on a number line.

21. Represent the 5.348 on a number line.

22. Arrange in ascending order : $\sqrt[3]{2}$, $\sqrt[2]{4}$, $\sqrt[4]{3}$.

23. Find the value of a and b if $\frac{\sqrt{7}-2}{\sqrt{7}+2} = a\sqrt{7} + b.$

24. If A = {b, c, e, g, h}, B = {a, c, d, g, i} and C = {a, d, e, g, h} then show that $A-(B\cap C) =(A-B)\cup (A-C)$.