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Tamilnadu Board

Mid-Term Exam Question Paper

2024



Class : 9

Register Number | | | | | | | |

FIRST MID TERM TEST - 2024

MATHEMATICS

Time Allowed : 1.30 Hours] **[Max. Marks : 50**

PART - I

Choose the correct Answer. **7x1=7**

1. For any three sets A , B and C, $(A - B) \cap (B - C)$ is equal to

   (a) A only (b) B only (c) C only (d) ϕ

2. If $U = \{x : x \in N \text{ and } x<10\}$, $A = \{1,2,3,5,8\}$ and $B = \{2,5,6,7,9\}$, then $n((A \cup B)^{l})$ is

   (a) 1 (b) 2 (c) 4 (d) 8

3. If $A \cup B = A \cap B$, then

   (a) $A \neq B$ (b) $A = B$ (c) $A \subset B$ (d) $B \subset A$

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

   (a) 8 (b) 5 (c) 6 (d) 7

5. $\sqrt{27} + \sqrt{12}$ = -------

   (a) $\sqrt{39}$ (b) $5\sqrt{6}$ (c) $5\sqrt{3}$ (d) $3\sqrt{5}$

6. Which one of the following is an irrational number

   (a) $\sqrt{25}$ (b) $\frac{\sqrt{9}}{4}$ (c) $\frac{7}{11}$ (d) π

7. Which one of the following has a terminating decimal expansion?

   (a) $\frac{5}{64}$ (b) $\frac{8}{9}$ (c) $\frac{14}{15}$ (d) $\frac{1}{12}$

PART - II

II. **Answer any 5 Questions. Q.No. 14 is compulsory.** **5x2=10**

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

   (i) ASSESSMENT (ii) PRINCIPAL

9. Write down the power set of the following sets A = {a,b}.

10. If n(A) = 0. find n(P(A)).

11. Represent $A \Delta B$ through Venn diagram.

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

13. Simplify the following $5\sqrt{3} + 18\sqrt{3} - 2\sqrt{3}$.

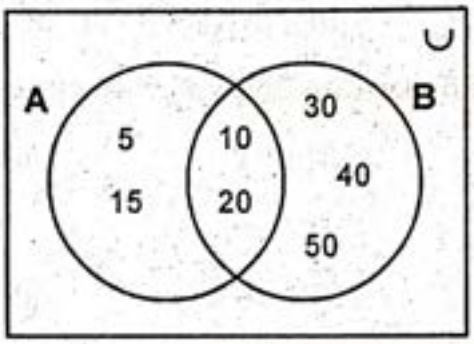
14. Represent the following numbers in the scientific notation 2000.57.

PART - III

III. Answer any 5 questions. (Q.No.21 is compulsory) **5x5=25**

15. Verify A - (B ∪ C) = (A - B) ∩ (A - C) using venn diagrams.

16. From the venn diagram, verify that n(A∪B) = n(A) + n(B) - n(A∩B).



17. In a party of 60 people, 35 had Vanilla ice cream, 30 had Chocolate ice cream. All the people had at least one ice cream. Then how many of them had,

    (i) both Vanilla and Chocolate ice cream.

    (ii) only Vanilla ice cream.

    (iii) only Chocolate ice cream.

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

19. Arrange surds in decending order : $\sqrt[3]{5}$, $\sqrt[4]{4}$, $\sqrt[3]{3}$

20. Represent 4.863 on the number line.

21. If A = {0,2,4,6,8}, B = {x:x is a prime number and x<11} and C = {x:x∈N and 5≤x<9} then verify A ∪ (B ∩ C) = (A ∪ B) ∩ (A ∪ C)

PART - IV

IV. Answer the following: **1x8=8**

22. (a) Construct the ΔLMN such that LM = 7.5 cm, MN = 5 cm, and LN = 8 cm. Locate its centroid.

(OR)

(b) Construct the Centroid of ΔPQR whose sides are PQ = 8cm , QR = 6cm , RP = 7cm.

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