FM

9 - STD

# FIRST MID TERM TEST - 2023

## MATHEMATICS

Time : 1.30 Hrs Marks : 50

**I Choose the correct answer.** 7 X 1 = 7

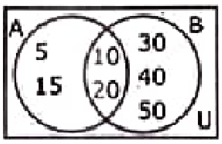
1. For any three sets A,B and C, (A - B) $\cap$ (B - C) is equal to
   a) A only b) B only c) C only d) $\phi$
2. If $U = \{x : x \in N$ and x < 10}, A = {1,2,3,5,8} and B = {2,5,6,7,9} then $n[(A \cup B)']$ is a) 1 b) 2 c) 4 d) 8
3. If $A \cup B = B \cap A$ these a) $A \neq B$ b) $A = B$ c) $A \subset B$ d) $B \subset A$
4. Uf A = {x, y, z} then the number of non-empty 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) $\sqrt{9/4}$ c) $7/11$ d) $\pi$
7. Which one the following has a terminating decimal expansion?
   a) $5/64$ b) $8/9$ c) $14/15$ d) $1/12$

**II Answer any 5 questions. Q. No. 14 is compulsory.** 5 X 2 = 10

8. Write the set of letters of the following words in roster form
   i) ASSESSMENT ii) PRINCIPAL
9. Write all the subsets of A = {a,b}.
10. If n(A) = 0, find n[P(A)].
11. Represent $A \Delta B$ through Venn diagram.
12. Find any 4 irrational numbers between 0.12 and 0.13.
13. Simplify : $5\sqrt{3} + 18\sqrt{3} - 2\sqrt{3}$.
14. Represent in scientific notation 2000.57.

**III Answer any 5 questions. Q.No. 21 is compulsory.** 5 X 5 = 25

15. Verify A - (B $\cap$ C) = (A-B) $\cup$ (A-C) using Venn diagrams.
16. From the Venn diagram,
    verify that $n(A \cup B) = n(A) + n(B) - n(A \cap B)$




17. In a party of 60 people, 35 had Vannila ice cream, 30 had Chocolate ice cream. All the people had atleast one ice cream. Then how many of them had
    i) both Vannila and Chocolate ice cream.
    ii) Only Vannila 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. Represent 4.863 on the number line.
20. Write in decending order : $\sqrt[3]{5}$, $\sqrt[2]{4}$, $\sqrt[6]{3}$.
21. If A = {0, 2,4,6,8}, B = {x:x is prime number and x<11} and C = {x : x $\in N$ and $5 \leq x < 9$} then verify $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$.

**IV Answer the following question.** 1 X 8 = 8

22. Draw the graph $y = \left(\frac{3}{2}\right)x + 3$ ***(OR)*** Draw the graph y = 3x - 1.

**(CD) FM 9 - கணிதம் (EM) ஒரு பக்கம்**