



COMMON FIRST MID TERM TEST - 2023

**Standard - IX
MATHS**

Reg.No.

Time: 1.30 hrs.

Marks:50

PART - I

I. Choose the correct answer and write the option code and the corresponding order: **7×1=7**

1. If $A = \{x, y, z\}$ then the number of non empty subset of A is
 a) 8 b) 5 c) 6 d) 7
2. If $n(A) = 10$ and $n(B) = 15$ then the minimum and maximum number of elements in $A \cap B$ is
 a) 10, 15 b) 15, 10 c) 10, 0 d) 0, 10
3. If $U = \{x : x \in \mathbb{N} \text{ and } x < 10\}$ $A = \{1, 2, 3, 5, 8\}$ and $B = \{2, 5, 6, 7, 9\}$ then $n[(A \cup B)']$ is
 a) 1 b) 2 c) 4 d) 8
4. Which one of the following is an irrational number
 a) $\sqrt{25}$ b) $\sqrt[3]{\frac{9}{4}}$ c) $\frac{7}{11}$ d) π
5. $4\sqrt{7} \times 2\sqrt{3} =$ _____
 a) $6\sqrt{10}$ b) $8\sqrt{2}$ c) $8\sqrt{10}$ d) $6\sqrt{2}$
6. If $\sqrt{80} = k\sqrt{5}$ then $k =$ _____
 a) 2 b) 4 c) 8 d) 16
7. The length and breadth of a rectangular plot are 5×10^5 and 4×10^4 metres respectively. Its area is _____
 a) $9 \times 10^1 \text{m}^3$ b) $9 \times 10^9 \text{m}^2$ c) $2 \times 10^{10} \text{m}^2$ d) $20 \times 10^{20} \text{m}^2$

PART - II

Answer any 5 questions. Q.No.14 is compulsory:

5×2=10

8. Write all the subset of $A = \{a, b\}$
9. If $n[(P(A))] = 256$ find $n(A)$.
10. If $K = \{a, b, d, e, f\}$; $L = \{b, c, d, g\}$ and $M = \{a, b, c, d, h\}$ then find the following $K \cap (L \cup M)$ and verify distributive laws.
11. If $A = \{6, 7, 8, 9\}$ and $B = \{8, 10, 12\}$ find $A \Delta B$.
12. Find any three rational numbers between $\frac{-7}{11}$ and $\frac{2}{11}$
13. Find the value of i) $\left(\frac{64}{125}\right)^{-2/3}$ ii) $(49)^{1/2}$
14. Simplify : $5 \sqrt[3]{40} + 2 \sqrt[3]{625} - 3 \sqrt[3]{320}$

PART - III**Answer any 5 questions. Question No.21 is compulsory:****5×5=25**

15. Let $U = \{0, 1, 2, 3, 4, 5, 6, 7\}$ $A = \{1, 3, 5, 7\}$ and $B = \{0, 2, 3, 5, 7\}$ find the following sets. i) A' ii) B' iii) $A \cup B'$ iv) $(A \cup B)'$ v) $(A')'$
16. Verify $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ using Venn Diagrams.
17. If $P = \{x/x \in W \text{ and } 0 < x < 10\}$ $Q = \{x/x = 2n+1 \ n \in W \text{ and } n < 5\}$ and $R = \{2, 3, 5, 7, 11, 13\}$ then verify $P - (Q \cap R) = (P - Q) \cup (P - R)$
18. In a party of 60 people ; 35 had Vanilla icecream. 30 had Chocolate ice cream. All the people had at least one icecream. Then how many of them had
i) Both Vannilla and Chocolate ice cream
ii) Only Vanilla ice cream
iii) Only Chocolate ice cream
19. Express each of the following surds in its simplest form i) $\sqrt[3]{108}$ ii) $\sqrt[3]{(1024)^{-2}}$ and find its order, radicand and coefficient.
20. If $\sqrt{2} = 1.414$ find the value of $\frac{8 - 5\sqrt{2}}{3 - 2\sqrt{2}}$ (to 3 places of decimals)
21. Simplify : i) $(2.75 \times 10^7) + (1.23 \times 10^8)$
ii) $(8.41 \times 10^4) \div (4.3 \times 10^5)$

PART - IV**Answer the following:****1×8=8**

22. A) Represent the following $\sqrt{9.3}$ on a number line.
(OR)
B) Represent 5.348 on the number line.
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