1ns-9M

Standard 9
MATHS

Time: 1.30 Hrs.

Marks: 50

I. Choose the best answer: 6×1=6

1) If B⊆A then n(A∩B) is
   a) n(A−B)   b) n(B)   c) n(B−A)   d) n(A)

2) The set P = {x/x∈Z, −1<x<1} is a
   a) Singleton set   b) Power set   c) Null set   d) Subset

3) Which of the following is true?
   a) A−B = A∩B   b) A−B = B−A   c) (A∪B)' = A'∪B'   d) (A∩B)' = A'∪B'

4) If $\frac{1}{7} = 0.\overline{142857}$ then the value of $\frac{5}{7}$ is
   a) $0.\overline{142857}$ b) $0.\overline{714285}$ c) $0.\overline{571428}$ d) 0.714285

5) If $\sqrt{80} = K\sqrt{5}$, then K =
   a) 2   b) 4   c) 8   d) 16

6) The exterior angle of a triangle is equal to the sum of two
   a) Exterior angles
   b) Interior opposite angles
   c) Alternate angles
   d) Interior angles

II. Answer ANY EIGHT questions: 8×2=16

[Question No. 17 is compulsory]

7) List the set of letters of the word "PARALLELOGRAM" in Roster form.

8) Write down the power set of B = {1, 2, 3}.

9) If A = {6, 7, 8, 9} and B = {8, 10, 12} find A∆B.

10) If A = {b, e, f, g} and B = {c, e, g, h}, then verify the commutative property of
    (i) union of sets   (ii) intersection of sets.

11) If n(A) = 25, n(B) = 40, n(A∪B) = 50 and n(B') = 25 find n(A∩B) and n(∪).

12) Find any two rational numbers between $\frac{1}{4}$ and $\frac{1}{5}$.

13) Convert the decimal number $0.4\overline{5}$ in the form of $\frac{p}{q}$.

14) Find the value of $\left(\frac{64}{125}\right)^{-2/3}$.

15) Rationalise the denominator of $\frac{5}{3\sqrt{5}}$.

16) Write the number $3.459×10^{-6}$ in decimal form.

17) Show that $\sqrt[3]{7} > \sqrt[4]{5}$.

III. Answer ANY FOUR questions: $4 \times 5 = 20$

[Question No. 23 is compulsory]

18) Verify $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ using venn diagrams.

19) If $A = \{x : x = 2^n, n \in W \text{ and } n < 4\}$, $B = \{x : x = 2n, n \in N \text{ and } n \le 4\}$ and $C = \{0, 1, 2, 5, 6\}$, then verify the associative property of intersection of sets.

20) In a college, 240 students play cricket, 180 students play football, 164 students play hockey, 42 play both cricket and football, 38 play both football and hockey, 40 play both cricket and hockey and 16 play all the three games. If each student participate in atleast one game, then find

   i) the number of students in the college

   ii) the number of students who play only one game

21) Represent $6.\overline{4}$ on the number line up to 3 decimal places.

22) The angles of a triangle are in the ratio 1:2:3. Find the measure of each angle of the triangle.

23) If $x = \sqrt{5} + 2$, then find the value of $x^2 + \dfrac{1}{x^2}$.

IV. Answer the question: $1 \times 8 = 8$

24) In which quadrant does the following points lie?

   (a) $(3, -8)$ (b) $(-1, -3)$ (c) $(2, 5)$ (d) $(-7, 3)$

(OR)

   Construct a perpendicular bisector of the line segment PQ = 8 cm.