



V10M

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- 13) Find the next three terms of the sequence 8, 24, 72, .....
- 14) Find the geometric progression whose first term is 7 and common ratio is 6.
- 15) Find the sum of  $3+6+9+\dots+96$ .

(OR)

Compute  $x$  such that  $10^4 \equiv x \pmod{19}$ .

## Section - III

**Note: i) Answer any 5 questions.****5×5=25****ii) Question number 22 is compulsory.****iii) Select any 4 questions from the first 6 questions.**

- 16) Let  $A = \{x \in W/x < 2\}$ ,  $B = \{x \in N, 1 < x \leq 4\}$  and  $C = \{3, 5\}$ , Verify that  $A \times (B \cup C) = (A \times B) \cup (A \times C)$ .
- 17) Let  $f: A \rightarrow B$  be a function defined by  $f(x) = \frac{x}{2} - 1$ , where  $A = \{2, 4, 6, 10, 12\}$ ,  $B = \{0, 1, 2, 4, 5, 9\}$  Represent  $f$  by (i) a set of ordered pairs (ii) a table (iii) an arrow diagram (iv) a graph.
- 18) Let  $f(x) = x^2$ ,  $g(x) = 2x$  and  $h(x) = x+4$ , show that  $fo(goh) = (fog)oh$ .
- 19) Find the HCF of 396, 504 and 636.
- 20) The sum of three consecutive terms of an A.P is 27 and their product is 288, find the three terms of the A.P.
- 21) Find the sum to  $n$  terms of the series  $3+33+333+\dots+n$  terms.
- 22) If the function  $f: R \rightarrow R$  is defined by  $f(x) = \begin{cases} 2x+7; & x < -2 \\ x^2-2; & -2 \leq x < 3 \\ 3x-2; & x \geq 3 \end{cases}$

Then find the values of (i)  $f(4)$  (ii)  $f(-2)$  (iii)  $f(4)+2f(1)$  (iv)  $\frac{f(1)-3f(4)}{f(-3)}$

(OR)

Rekha has 15 square colour papers of sizes 10 cm, 11 cm, 12 cm, ..... 24 cm. How much area can be decorated with these colour papers?

## Section - IV

**1×8=8****Note: Answer the following.**

- 23) Construct a triangle similar to given triangle PQR with its sides equal to  $\frac{2}{3}$  of the corresponding sides of the triangle PQR. (Scale factor  $\frac{2}{3}$ )

(OR)

- 24) A bus is travelling at a uniform speed of 50 km/hr. Draw the distance time graph and hence find from the graph (i) the constant of variation (ii) how far will it travel in  $1\frac{1}{2}$  hrs (iii) the time required to cover a distance of 300 km.