OEMT – 302

III Semester All UG Courses Examination, February/March 2024
(NEP Scheme) (Freshers and Repeaters)
MATHEMATICS (Open Elective)
Quantitative Mathematics

Time : 2½ Hours Max. Marks : 60

Instruction : *Answer* ***all*** *the questions.*

PART – A

I. Answer **any four** of the following. **(4×2=8)**

1) Define Integers.

2) Find the cube root of 512.

3) Simplify 0.25 + 0.036 + 0.0075.

4) Find the LCM of 72 and 105.

5) Solve $x^2 - 5x + 6 = 0$.

6) Solve for x ; $\frac{x}{5} - \frac{x}{6} = 4$.

PART – B

II. Answer **any four** of the following. **(4×5=20)**

7) Find the HCF of 120, 150 and 135.

8) Find the greatest 4-digit number, which is a perfect square.

9) The difference of two numbers is 11 and one-fifth of their sum is 9. Find the numbers.

10) The cost of 2 apples and 3 mangoes is Rs. 70 and the cost of 1 apple and 1 mango is Rs. 30. Find the cost of 5 mangoes.

11) Simplify $3 \times 0.3 \times 0.03 \times 0.003 \times 300$.

12) If a man drives to his office at 60 km/hr and returns home along the same route at 30 km/hr, then find the average speed.

P.T.O.

PART – C

III. Answer **any four** of the following. **(4×8=32)**

13) a) Find the least number to be divided to make 2420 a perfect square.

b) Solve for x : $\frac{x+2}{4} - \frac{2}{3} = \frac{x+2}{3} + \frac{1}{3}$.

14) a) If $\frac{a}{b} = \frac{4}{3}$, then find the value of $\frac{6a+4b}{6a-5b}$.

b) The product of two consecutive multiples of 5 is 1050. What are the numbers ?

15) a) Find the average of first 60 natural numbers.

b) Find the length and width of a rectangle whose length is 5cm longer than the width and whose area is 50 cm.

16) a) The cost of 1 table and 2 chairs is Rs. 600 and the cost of 2 tables and 1 chair is Rs. 750. Find the cost of 3 tables and 2 chairs.

b) In an election 3 candidates got 4800 total number of votes. Their ratio of the votes is 3 : 4 : 5 respectively. What percentage of votes does the winning candidate got ?

17) a) A train 300 metres long is running with a speed of 55 km/hr. In what time will it pass a man who is running at 5 km/hr in the same direction in which the train is going ?

b) A cyclist covers a distance of 720 metres in 2 minutes 30 seconds. What is the speed of the cyclist in km/hr ?

18) a) A can do a piece of work in 5 days and B can do it in 6 days. How long will they take if both work together ?

b) 4 men and 6 women finish a job in 8 days, while 3 men and 7 women finish in 10 days. How many days will 10 women take to finish it ?