

24U110

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Name:

Reg. No:

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(FYUGP)

CC24U MAT1 FM105(2) - MATHEMATICS FOR COMPETITIVE

EXAMINATIONS - PART - I

(B.Sc. Mathematics - MDC)

(2024 Admission - Regular)

Time: 1.5 Hours

Maximum : 50 Marks

Credit : 3

Part A

Answer *all* questions. Each question carries 2 marks.

	CO	Level
1. Find the missing term in the following series 1, 8, 27, ____, 125.	CO1	2
2. How many $\frac{1}{8}$'s are there in $37\frac{1}{2}$?	CO1	2
3. Find the LCM of $\frac{44}{50}$ and $\frac{33}{70}$.	CO2	2
4. Divide 1111 in the ratio 8 : 3.	CO3	3
5. Rema is thrice as old as his daughter and the sum of their ages is 60 years. Find Rema's age.	CO3	3
6. A person buys a pen for Rs. 60 and sells it for Rs. 75. What will be his gain percentage?	CO4	2
7. What will be the simple interest for 1 year and 4 months on a sum of Rs. 25000 at the rate of 15% per annum?	CO4	2
8. A person covers a certain distance with a speed of 12 km/h in 10 minutes. If he wants to cover the same distance in 6 minutes, what should be his speed?	CO5	2
9. A train A is 180m long, while another train B is 240m long. Train A has a speed of 30km/h and Train B's speed is 40km/h. If the trains move in opposite directions, then find when will train A pass train B completely?	CO5	3
10. The speed of a boat with the stream is 10km/h and while returning its speed becomes 6km/h. Find the speed of the boat in still water.	CO5	2

(Ceiling: 16 Marks)

Part B

Answer *all* questions. Each question carries 6 marks.

11. What is the number which on (a) addition (b) subtraction from the number 5029 is completely divisible by 17? CO1 2
12. Find p if $(272 \times 425) \div p^2 = 400$. CO2 3
13. The ratio of the present ages of A and B is 8:15. 8 year ago the ratio of their ages was 6:13. What will be the ratio of ages of A and B after 8 year from now? CO3 3
14. A sum of Rs. 10000 amounts to Rs. 12100 in 2 years, when the interest is compounded annually. What is the rate of interest per annum? CO3 2
15. A person travels from A to B at a speed of 40km/h and returns by increasing his speed by 50%. What is his average speed for both the trips? CO5 3

(Ceiling: 24 Marks)

Part C

Answer any *one* question. The question carries 10 marks.

16. (a) Find $1 + \frac{1}{2} + \frac{1}{7} + \frac{1}{14}$. CO2 3
(b) If $a * b = (a \times b) + b$, then find $9 * 8$. CO2 2
(c) A boat takes 4h to row 96km downstream and 6h to row the same distance upstream. Find the boat's rate in still water and rate of current. CO5 3
17. (a) By selling a fan for Rs. 2604, there is a loss of 7%. If it is sold for Rs. 3094, then what is the profit percentage. CO4 3
(b) If 12 man can finish a work in 20 days, then find the number of days required to complete the same work by 15 men? CO5 3
(C) Find the day of the week on 15th August 1947. CO5 2

(1 × 10=10 Marks)
