

D 113434

(Pages : 2)

Name.....

Reg. No.....

**FIRST SEMESTER (CUFYUGP) DEGREE EXAMINATION
NOVEMBER 2024**

Mathematics

MAT1FM105 (2)—MATHEMATICS FOR COMPETITIVE EXAMINATIONS—Part I

(2024 Admission onwards)

Time : One Hour and a Half

Maximum : 50 Marks

Section A

All question can be answered.

Each question carries 2 marks.

Ceiling 16 marks.

1. Write a short-note on Irrational Numbers. Give an example.
2. Find the LCM of $\frac{2}{3}$, $\frac{1}{2}$ and $\frac{5}{6}$.
3. The sum of HCF and LCM of two numbers is 403 and their LCM is 12 times their HCF. If one number is 93, then find the another number.
4. The number obtained by interchanging the digits of a two-digit number is more than the original number by 27 and the sum of the digits is 13. What is the original number ?
5. The price of 10 % increased of an article of Rs.100, then again 10 % increased the price. How much is increased in total price ?
6. If $A : B = 3 : 4$ and $B : C = 8 : 9$, then find the value of $A : B : C$.
7. On a 20 % discount sale, an article costs Rs. 596. What was the original price of the article ?
8. The simple interest on a certain sum for 2 year is Rs. 120 and compound interest is Rs. 129. Find the rate of interest.

Turn over

9. A person riding a bike crosses a bridge with a speed of 54 km/h. What is the length of the bridge, if he takes 4 min to cross the bridge ?
10. What time will be taken by a boat to cover a distance of 64 km. along the stream, if speed of boat in still water is 12 km/h and speed of stream is 4 km/h ?

Section B

All questions can be answered.

Each question carries 6 marks.

Ceiling : 24 marks.

11. Each student of class 10 contributed some money for a picnic. The money contributed by each student was equal to the cube of the total number of students. If the total collected amount was Rs. 29,791, then find the total number of students.
12. A father is twice as old as his son. 20 year back, he was twelve times as old as his son. What is the present age of father ?
13. Find the least number of complete years in which a sum of money put out at 20 % compound interest, will be more than double.
14. Kamal can do a work in 15 days and Vimal is 50 % more expert than Kamal to complete the same work, then find total time taken to complete the work by Vimal.
15. Find the angle between the hour hand and the minute hand of a clock when the time is 4 : 10.

Section C

*Answer any **one** question. The question carries 10 marks. (1 × 10 = 10 marks).*

16. (a) Find the cube root of 9261.
- (b) The sum of three numbers is 315. If the ratio between 1st and 2nd is 2 : 3 and the ratio between 2nd and 3rd is 4 : 5, then find the 2nd number.
17. (a) A man loses 10 % by selling an article for Rs. 180. At what price should he sell it to gain 10 % ?
- (b) A train running at the speed of 72 km/h goes past a pole in 15 s. What is the length of the train ?