

Reg No.....

Name.....

**B A, B SC, B COM DEGREE END SEMESTER EXAMINATION - APRIL 2026****UGP(HONS.) SEMESTER - 2: MULTI DISCIPLINARY COURSE****COURSE CODE: 24UMATMDC101: MATHEMATICS FOR COMPETITIVE EXAMINATIONS***(For Regular 2025 and Improvement/Supplementary 2024 Admission)*

Time: 1.5 Hours

Max. Marks - 50

*(Use of ordinary calculator is permitted)***PART A***(Maximum marks from this part is 10. Each question carries 2 marks)*

1. What is the sum of the first  $n$  natural numbers? (CO 1 R)
2. If a person is travelled from A to B at  $x$  Km/Hr and returned at  $y$  Km/Hr. What is the average speed? (CO 2 A)
3. If the average temperature of the week is 40 Degree Celsius, what was the temperature on the fourth day? (CO 1 A)
4. Find the value of  $X$  if  $25\%$  of  $X + 35\%$  of  $X = 6000$ . (CO 1 E)
5. If the speed of the train is doubled, what will be the change in time to cover a fixed distance? (CO 4 E)
6. If Rs 9000 is divided among A and B such that B gets double that of A ,what is the share of B? (CO 3 A)
7. Raju got 3 pens for Rs.10 and when he sold the pen he got Rs.10 for two pens. What is the profit percentage? (CO 2 A)
8. A pipe can fill  $\frac{1}{7}$  part of a tank in one hour. How much time will it take to fill the tank? (CO 4 A)

**PART B***(Maximum marks from this part is 20. Each question carries 5 marks)*

9. Find the HCF and LCM of 12,15,20. (CO 1 U)
10. Find the average of the squares of first 10 natural numbers. (CO 1 A)
11. A certain sum was divided among A, B and C in the ratio 6:5:1. If B got Rs.1500, what was the total amount given to A and C together? (CO 3 A)
12. If A and B together can do a work in 12 days while B alone can do it in 20 days, In how many days A alone can complete the work? (CO 4 A)

13. If 4 men working 8 hours per day for 10 days can complete a work, how many days will it take for 5 men working 10 hours per day to complete double the work? (CO 4 E)
14. A dealer is selling bicycles at Rs.18000 at a loss of 10%. At what price should he sell in order to get 25% profit? (CO 2 E)

**PART C**

***(Maximum marks from this part is 20. Each question carries 10 marks)***

15. a) A train running at 90Km per hour can cross a bridge of length 2.5Kms in 2 minutes. What is the length of the train? (CO 4 E)
- b) Walking at  $\frac{3}{4}$  of the usual speed, a student is 10 minute late to school. What is the usual time of walking to reach the school?
16. a) When a shopkeeper sold an item at Rs.2400, there was a loss of 20%. What will be the loss or gain percentage if the item is sold for Rs.2700?
- b) What is the profit percentage if the selling price of 8 items is the same as the cost price of 12 items? (CO 2 A)
17. A and B together can do a work in 20 days, B and C together can do it in 24 days. A, B and C together can do it in 15 days. In how many days B alone can do the work? (CO 4 A)
18. a) A mixture of 40 litres contains milk and water in the ratio 7:1.What will be the ratio of milk and water if 10 litre of water is added to the mixture?
- b) A invested Rs.10,000 and B invested Rs.12,000 after 6 months in a business. What will be the share of B from a profit of Rs 40,000 at the end of one year? (CO 3 A)