



Avinashilingam Institute for Home Science and Higher Education for Women
Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD [now MoE]
Re-accredited with an 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore-641 043, Tamil Nadu, India

Continuous Internal Assessment Test II – October 2025
Semester – V

Class: III UG

Time: 2 Hrs

Branch: Mathematics

Max. Marks: 60

23BMAPA4 – Mathematics for Competitive Examinations

Course Outcomes:

- CO1: Solve the problems related to numbers
- CO2: Impart knowledge about fundamentals of arithmetical operations
- CO3: Understand the concepts of distance and work
- CO4: Compute the problems on business mathematics and mensuration
- CO5: Identify an appropriate approach to solve quantitative problems

PART-A

6 x 1 = 6

Choose the correct answer

1. A boat goes 30 km upstream in 4 hours and 36 km downstream in 3 hours. What is the speed of the stream? CO3K2
a. 1 km/hr b. 2 km/hr c. 3 km/hr d. 4 km/hr
2. A train covers 180 km at a speed of 60 km/hr. How long will it take? CO3K1
a. 2 hrs b. 3 hrs c. 4 hrs d. 5 hrs
3. The compound interest on a sum of Rs. 10,000 at 5% per annum for 2 years is: CO4K2
a. Rs. 1,025 b. Rs. 1,050 c. Rs. 1,100 d. Rs. 1,200
4. The probability of drawing an ace from a pack of cards is: CO4K2
a. 1/52 b. 1/13 c. 1/4 d. 1/26
5. The day after tomorrow is Tuesday. What day was two days before yesterday? CO5K4
a. Sunday b. Monday c. Tuesday d. Wednesday
6. How many arrangements are possible with the letters of the word "SUCCESS"? CO5K2
a. 420 b. 1260 c. 5040 d. 840

PART – B

3 x 6 = 18

Answer all the Questions

7. a. A boat takes 4 hours to travel a certain distance downstream and 6 hours to return upstream. If the speed of the boat in still water is 5 km/hr, find the speed of the stream CO3K3
(or)
7. b. Solve a mixture problem: To what quantity of water should 30 liters of milk be added, so that the mixture contains 20% water? CO3K4

8. a. Find the area and volume of a cylinder whose height is 10 cm and base radius is 7 cm. Use $\pi = 22/7$. CO4K2
- (or)
8. b. A sum of Rs. 5,000 is lent out at 10% per annum compound interest. Find the amount after 3 years. CO4K1
9. a. Find the next two numbers in the series: 2, 6, 12, 20, 30, ... CO5K2
- (or)
9. b. Two trains start at the same time from two stations 250 km apart and move towards each other at 60 km/hr and 50 km/hr. When and where do they meet? CO5K3

PART – C

3 x 12 = 36

Answer all the questions

10. a. A boat covers a distance of 30 km upstream and 48 km downstream in 10 hours. Speed of the boat in still water is 8 km/hr. Find the speed of the stream and time taken in up and downstream CO3K4
- (or)
10. b. In a mixture of 50 litres, milk and water are in the ratio 7:3 respectively. How much water should be added to make the ratio 5:4? CO3K4
11. a. i) A vendor buys a TV for Rs. 10,000 and sells it at a profit of 12%. Find the selling price. If he gives a discount of 5%, find his gain or loss percentage.
 ii) Calculate the height of a tower if the angle of elevation from a point on the ground 30 m away from the foot of the tower is 60° . CO4K2
- (or)
11. b.i) Find the area of a trapezium whose parallel sides are 20 m and 14 m and the distance between them is 8 m.
 ii) The true discount on a bill of Rs. 15,000 is Rs. 600. Find the rate of interest and the time if the simple interest is Rs. 700. CO4K3
12. a.i) How many ways can 5 boys and 3 girls be seated in a row so that boys and girls sit alternately?
 ii) The ages of A and B are in the ratio 5:4. After 6 years, the ratio of their ages will be 6:5. Find their present ages. CO5K4
- (or)
12. b.i) A clock shows the time as 3:15. What is the angle between the hour and minute hands?
 ii) Find the odd one out: 121, 144, 169, 196, 225, 256, 289. Justify your answer. CO5K5

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