QP CODE: 42425

Fourth Semester B.Com. Degree Examination
May/June 2026
(SEP Scheme)
COMMERCE
SUBJECT : SCD 0250 : BUSINESS MATHEMATICS - II

Time : 3 Hours Max. Marks : 80

Instructions to Students:

1. **The student should legibly write Section number along with question numbers within the margin ONLY.**
2. **The answers without Section number and question numbers will not be valued.**
3. **Draw a neat & labeled diagram wherever necessary.**
4. **Do not write anything (except register number) on the question paper.**

SECTION - A

I. Answer any THREE questions. Each question carries FIVE marks. (3x5=15)

1. $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ $A = \{3, 4, 5, 6\}$ $B = \{1, 2, 3, 4\}$. Find the value of:
   a) A U B b) A - B c) A'
2. Find the value of ${}^{6}p_{2}$ and ${}^{12}p_{4}$.
3. In AP 3, 7, 11, 15. Find the 5^{th} and 10^{th} Term.
4. Find the Determinant and Adjoint of a Matrix $A = \begin{bmatrix} 2 & 3 \\ 1 & 4 \end{bmatrix}$
5. Find the circumference and Diameter of a Circle whose Radius is 7cm.

SECTION - B

II. Answer any TWO of the following questions. Each carries TEN marks.(2x10=20)

6. What is Matrix? Explain the types of Matrices.
7. $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ $A = \{1, 2, 3, 4\}$ $B = \{2, 4, 5, 6\}$. Verify the De Morgan's Law.
8. a. Find the value of ${}^{9}C_{4}$, and ${}^{10}C_{2}$.
   b. Find the Sum of AP 4, 7, 10 ..... 148.
9. a. If $A = \begin{bmatrix} 4 & 2 \\ 6 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 8 & 4 \\ 6 & 2 \end{bmatrix}$. Find the value of 2A + 3B
   b. Find Perimeter and Area of Rectangle of l = 35 cm, b = 12 cm.

SECTION - C

III. Answer any THREE of the following questions. FIFTEEN marks each. (3x15=45)

10. Define Sets. Explain different types of Sets.

11. a. If $A = \begin{bmatrix} 5 & 6 \\ 1 & 2 \end{bmatrix}$ $B = \begin{bmatrix} 5 & 7 \\ 8 & 4 \end{bmatrix}$ $C = \begin{bmatrix} 1 & 7 \\ -1 & 2 \end{bmatrix}$

Verify A(BC) = (AB)C and A(B+C) = AB + AC

b. $A = \{ 3, 5, 7, 9 \}$ $B = \{ 5, 8, 9 \}$ $C = \{ 1, 2, 3, 9 \}$

Show that $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

c. Insert 4 geometric means between 1 & 243.

12. a. Solve this Equation by using Cramer's Rule:

$2x + 5y = 45$

$5x + 3y = 46$

b. In the Following GP 3, 6, 12, 24 ..... Find the 6^{th} and 10^{th} Term.

c. In how many ways can be letter of the word 'LEADER' be Rearranged.

13. a. A Triangle has base 16 cm and Height 9 cm. Find the Area. If the base is increased to 20 cm. Find the New Area.

b. Among 520 members in a village, 360 members were engaged in Cattle Rearing and 280 members with poultry farming and 180 were doing both. How many people are :

i. not involved in Either of the work?

ii. engaged only in Poultry Farming?

c. Find the Sum of the following G P 1, 2, 4, 8, 16 ..... 10^{th} Term.

14. a. Find the Inverse of the following matrix $A = \begin{bmatrix} 2 & 7 \\ 1 & 3 \end{bmatrix}$

b. In how many ways can a Group of 5 Men and 2 Women be made out of a total of 7 Men and 3 Women.

c. The side of a Square is 14 cm, find its Area and Perimeter. If the side is Doubled, Find the Area.

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