



SE – 224

I Semester B.B.A. Examination, January/February 2026
(SEP 2024 – 25) (Repeaters)
BUSINESS ADMINISTRATION
BBA-1.4 : Quantitative Analysis for Business

Time : 3 Hours

Max. Marks : 80

Instruction : Answer should be written in **English** only.

SECTION – A

Answer **any seven** sub-questions. **Each** sub-question carries **two** marks. (7×2=14)

1. a) Find 80% of 1200.
- b) Find the duplicate ratio of 3 : 2.
- c) What is linear equation ? Give an example.
- d) Solve for x : $x^2 - 25 = 0$.
- e) Define a set. Give an example.
- f) Find simple interest on ₹ 5,000 for 6 years at 4% p.a.
- g) If $A = \begin{pmatrix} 2 & 3 \\ 4 & 5 \end{pmatrix}$ and $B = \begin{pmatrix} 4 & 1 \\ 2 & 6 \end{pmatrix}$, then find $A + B$.
- h) What is a diagonal matrix ? Give an example.
- i) What is permutation ?
- j) Give the meaning of perpetuity.

SECTION – B

Answer **any three** of the following questions. **Each** question carries **eight** marks.

(3×8=24)

2. In a class of 150 students, it was found that 95 students like ice-cream and 79 students like fruit juice. Assuming every student likes at least one of the above, find the number of students who like both ice-cream and fruit juice. Show the result through a Venn diagram.
3. If $5(x + 4) - 32 = 3(x - 6) + 10$, find the value of x.

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4. In how many ways can you arrange the letters of the word "COMMERCE" with or without meaning using permutation concept ?
5. If $A = \begin{pmatrix} 3 & 2 \\ 1 & 5 \end{pmatrix}$ show that $A^2 - 8A + 13I = 0$, where I is the identity matrix of order 2×2 .
6. Find the difference between compound interest and simple interest on ₹ 20,000 for 5 years at 8% p.a.

SECTION – C

Answer **any three** questions. **Each** question carries **fourteen** marks. **(3×14=42)**

7. a) If 18 women working 9 hours per day can complete a piece of work in 20 days, how long will it take for 24 women working 6 hours per day to finish the same work ?
- b) A woman earns a monthly salary of ₹ 60,000. She spends 10% of her salary on rent, 25% on groceries and 15% on travel. The rest of the amount is saved. Find her monthly savings.
8. a) Solve by using elimination method : $2x + 3y = 5$; $4x - 2y = 2$.
- b) If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 2, 3, 4, 5\}$, $B = \{3, 4, 5, 6, 7\}$
Verify the following :
(i) $(A - B) \cup (B - A) = (A \cup B) - (A \cap B)$
(ii) $(A \cup B)^c = A^c \cap B^c$.
9. a) If $A = \begin{pmatrix} 1 & 2 & 5 \\ 3 & 4 & 2 \\ 0 & 1 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} 4 & 1 & 0 \\ 6 & 2 & 1 \\ 3 & 5 & 4 \end{pmatrix}$ then find (i) $A + 2B$ (ii) $3B - C$.
- b) Solve by Cramer's Rule : $x + 3y = 4$; $6x - y = 5$.
10. a) A man borrowed ₹ 20,000 from a money lender. After 2 years, he repaid ₹ 24,200 in full settlement of his debt. Find the rate of compound interest per annum.
- b) Find the future value of annuity of ₹ 5,000 for 5 years at 10% p.a. compound interest.
11. a) Solve by using formula method : $6x^2 - 30x + 36 = 0$.
- b) Find the value of ${}^4C_1 + {}^4C_2 + {}^4C_3 + {}^4C_4$.
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