



Total No. of Questions : 4

Total No. of Pages: 2

FIRST YEAR B.Com.
24COB11103A : Business Mathematics
(Semester I)

Program : B.Com.
Program Specific : B.Com.
SET: A

Credits: 4
Time: 3 Hours
Max. Marks: 60

Instructions to the candidate:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Use of Calculator is allowed

Q1. Answer the following Questions

5 x 2 Marks each = 10 Marks

- (a) Explain the term Stock Exchange.
- (b) State the steps for formulation of LPP
- (c) Describe Row Matrix with appropriate example.
- (d) Simple interest of a certain sum of money for 5 years is Rs. 500. What will be the simple interest for 7 years?
- (e) Evaluate the determinant of matrix $A = \begin{bmatrix} 5 & 4 \\ 2 & 3 \end{bmatrix}$

Q2. Solve ANY FOUR of the following

4 x 5 Marks each = 20 Marks

- (a) Calculate simple interest on Rs. 10,000 at 10% p.a. for 4 years.
- (b) Calculate amount of Rs. 5,000 for 3 years at 8% p.a. compounded yearly.
- (c) Which investment is more profitable : 15% at Rs. 130 OR 18% at Rs. 200.
- (d) Calculate determinant of the matrix

$$A = \begin{vmatrix} 2 & 3 & 4 \\ 1 & 3 & 5 \\ 2 & 1 & 6 \end{vmatrix}$$

- (e) A manufacturer produces two types of products A and B that requires Gold and Silver. Each unit of product A requires 2 grams of Gold and 3 grams of Silver. Each unit of product B requires 3 grams of Gold and 3 grams of Silver. Availability of Gold per day is 120 grams and availability of Silver per day is 180 grams. Profit per unit of Product A is Rs. 700 and profit per unit of Product B is Rs. 900. Formulate the above problem as LPP to maximize the profit.

(f) If $A = \begin{bmatrix} 5 & 4 \\ 2 & 3 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 \\ 5 & 3 \end{bmatrix}$ $C = \begin{bmatrix} 3 & 2 \\ 1 & 4 \end{bmatrix}$ Calculate $2A + 3B + 2C$

Q3. Solve ANY FOUR of the following

4 x 5 Marks each = 20 Marks

- (a) What will be the simple interest on Rs. 20,000 at 12% p.a. for 3 years?
- (b) If $A = \begin{bmatrix} 1 & 3 \\ 2 & 5 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 4 \\ 2 & 1 \end{bmatrix}$ Calculate $3A + 2B$
- (c) Draw the graph of $3x + 2y \leq 6$ and show the appropriate region.
- (d) Which investment is more profitable? 20% at 260 or 25% at 300. (Face value = Rs. 100)
- (e) If $A = \begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 2 \\ 3 & 5 \end{bmatrix}$ Calculate the value of $4A - 2B$
- (f) Find compound interest on Rs. 5,000 for 2 years at 10% p.a.

Q4. Solve ANY ONE of the following

1 x 10 Marks each = 10 Marks

- (a) Explain in detail the various types of Matrices with appropriate examples.
- (b) Calculate adjoint of the matrix

$$A = \begin{vmatrix} 1 & 2 & 2 \\ 5 & 3 & 4 \\ 2 & 3 & 4 \end{vmatrix}$$
