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II Semester B.Com./BCLS-2 Degree Examination, September - 2021

COMMERCE

Methods and Techniques for Business Data Analysis

(CBCS Scheme Regular and Repeaters 2019-20 Onwards)

Paper : 2.6

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates:

Answers should be completely in **English**.

SECTION - A

Answer any **FIVE** of the following questions. Each question carries **Two Marks**. (5×2=10)

1. a) Find the 10th term of AP 10, 12, 14.....
- b) What is a null matrix?
- c) Solve $3x^2 - 27 = 0$
- d) What are even numbers?
- e) Find x if 50:25=10:x

f) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ $B = \begin{bmatrix} -1 & -2 \\ -3 & 4 \end{bmatrix}$ find A-B.

- g) What is simple Interest?

SECTION - B

Answer any **THREE** of the following questions. Each question carries **Five Marks**.

(3×5=15)

2. Solve by elimination method

$$x + 2y = 4$$

$$3x + y = 7$$

[P.T.O.]



3. Find the sum of the series $99+101+103$ to 25 terms.

4. Show that
$$\begin{vmatrix} 3 & 4 & 7 \\ 2 & 1 & 3 \\ -5 & -1 & 2 \end{vmatrix} = -40$$

5. Find Compound Interest on Rs.40,000 at 5% Interest p.a. for 3 years.

SECTION - C

Answer any **THREE** of the following questions. Each question carries 15 Marks.

(3×15=45)

6. a) If $A = \begin{bmatrix} 2 & 4 & 4 \\ 4 & 2 & 4 \\ 4 & 4 & 2 \end{bmatrix}$ prove that $A^2 - 8A - 20I = 0$ (8)

b) The sum of three numbers in GP is -21 and their product is 125. Find the numbers. (7)

7. a) The annual income of two persons is in the ratio of 8:5 and their annual expenditure in the ratio of 5:3. If they save Rs.1,200 p.a. and Rs.1,000 p.a, find their incomes. (8)

b) Find the difference between Compound Interest and Simple interest on Rs.5,000 interested for 4 years at 8% p.a. (7)

8. a) Solve for x under formula method $9x^2 - 3x - 2 = 0$ (8)

b) The present age of three persons is in the ratio of 4:7:9. Eight years ago the sum of their ages were 56. Find their present ages. (7)

9. a) Solve by Cramer's rule (7)

$$4x - 2y = 8$$

$$3x - y = 4$$

b) Solve for x (8)

$$\frac{3x-1}{2} + \frac{x+2}{3} = \frac{9x+12}{5} - 2$$