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I Semester B.B.A. Degree Examination, August - 2021

BUSINESS ADMINISTRATION

Quantitative Methods for Business - I

Paper : 1.5

(CBCS Scheme Repeater)

Time : 3 Hours

Maximum Marks : 70

Instructions to Candidates : Answer should be written in English.

SECTION - A

Answer any **Five** sub - questions from the following. Each carries **Two** marks.  $(5 \times 2 = 10)$

1. a) What do you mean by Compound Interest?
- b) An article costing Rs. 84 was sold for Rs. 105. Find the gain percent.
- c) Find the geometric Mean between 8 and 12.
- d) What are composite numbers?
- e) Calculate the rate of interest at which Rs. 750 will amount to Rs. 825 in 5 years.
- f) Find the L.C.M of 16, 24, and 36.
- g) Solve  $x$ ;  $2x - 4 = 10$ .

SECTION - B

Answer any **Three** of the following. Each carries **Six** marks.

$(3 \times 6 = 18)$

2. What is a matrix? Briefly explain the types of Matrices.
3. Find the compound Interest on Rs. 20,000 at 6% p.a for 4 years. What is the simple Interest on the same?
4. Solve  $9x + 5y = 37xy$ ,  
 $7x - 4y = 13xy$ .
5. Find the
  - a) Banker's Discount.
  - b) True discount.
  - c) Banker's gain.
  - d) Discounted value in the following bills.
    - i) Rs. 8000 for 3 months at 4.5% p.a
    - ii) Rs. 10,200 for 146 days at 5% p.a
    - iii) Rs. 14,450 for 35 days at 6% p.a
6. Divide Rs. 118 among A, B and C, so that  $A:B=3:4$  and  $B:C=5:6$ .

P.T.O.



## SECTION - C

Answer any **Three** of the following. Each carries **Fourteen** marks. (3×14=42)

7. a) The income of A and B are in the ratio of 5:3, their expenses are in the ratio of 8:5, and their savings are in the ratio of 2:1. If the total annual savings of A and B is Rs. 3,600. Find their individual incomes.

b) If  $A = \begin{bmatrix} 0 & 2 & 3 \\ 2 & 1 & 4 \end{bmatrix}$  and  $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$ . Find

i)  $2A + 4B$

ii)  $5B - 3A$

8. a) The sum of the first two terms of a G.P is 15 and the sum of first three terms of the same G.P is 63. Find the 5<sup>th</sup> term.

- b) Solve by Matrix Method.

$$2x + 3y = 8$$

$$3x - y = 1$$

9. a) Two years ago a man was six times as old as his son. In 18 years he was twice as old as his son. Determine their present ages.

- b) Solve for x;

$$\frac{2}{x-1} + \frac{3}{x+4} = \frac{5}{x+3}$$

10. If  $A = \begin{bmatrix} 1 & 5 & 6 \\ 7 & 8 & 9 \\ 0 & 1 & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} 4 & -2 & 3 \\ 0 & 1 & 2 \\ 3 & 4 & 5 \end{bmatrix}$  and  $C = \begin{bmatrix} 2 & 3 & 1 \\ 1 & 4 & 5 \\ 3 & 8 & 6 \end{bmatrix}$ . Find

i)  $A + B$

ii)  $A - B$

iii)  $A + C$

iv)  $A + 2B - 3C$

v) Prove

a)  $A + B = B + A$

b)  $A - (B + C) = (A + B) + C$

11. a) Nine tables and eight chairs cost Rs. 5280. Eight tables and twelve chairs cost Rs. 5280. Determine the cost of each table and of each chair.

b) Solve for x:  $(5x+1)(x+3) = 3(x-1)$ .