[5954]-203

F. Y B.B.A. (C.A.)

CA-203 : BUSINESS MATHEMATICS

(2019 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates :

1) *All questions are compulsory.*
2) *Neat diagram must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*

Q1) A) Fill in the blanks :-   [5 × 2 = 10]

    i) If the interest is calculate on the principal alone, then it is known as _____.

       (Simple Interest, Compound Interest, Annuity)

    ii) The price at which the articles are sold is called the _____ price.

       (Cost, Selling, Purchase)

    iii) If A and B matrices are of same order and A+B = B+A, this law is known as ____.

       (Commutative law, Associative law, Cramer's law)

    iv) The variables that help to decide the outcome are called _____.

       (Decision variables, Dependent variables)

    v) The column, which is introduced in the transportation matrix to balance the rim requirements is known as _____.

       (Key Column, Idle column, Dummy Column)

B) State whether the following statement are true or false   [3 × 2 = 6]

    i) Market value of the share is the current price at which the share is being traded in stock market.

    ii) The inverse ratio is the ratio in reverse order of the original ratio.

    iii) The zero matrix is not the additive identity for the matrices.

P.T.O.

Q2) Attempt any Four of the following (Four out of Six) :   [4 × 4 = 16]
   a) Find fourth proportional to 6,8,10.
   b) Find the simple interest on ₹ 7000 at 50/3% for 9 months.
   c) A TV set is sold for ₹ 36,375 at a loss of 15% find the purchase price of the TV set.
   d) Find the number whose 30% is 360.
   e) What are the components of Linear programming?
   f) Define the term matrices?

Q3) Attempt any Four of the following (Four out of Six) :   [4 × 4 = 16]
   a) What is percentage and how it is calculated?
   b) Find A + B = B + A When matrices.

$$A = \begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}, B = \begin{bmatrix} 3 & 1 \\ -1 & -2 \end{bmatrix}$$

   c) What we mean by objective function in LPP.
   d) An Amount of ₹ 1,200 is deposited in a bank paying an annual interest rate of 5% compounded yearly. Find the Balance after 2 years.
   e) What is transportation model?
   f) Find out the total income received from the investment. If Rohit invested ₹ 99,000 in 7½% Stocks at Rs. 81½ plus brokerage of ₹ 1.

Q4) Attempt any four of the following (Four out of six)   [4 × 4 = 16]
   a) At what price will ₹ 4,250 buy shares worth ₹ 5000? (They are ₹ 100 shares).
   b) A person invests his money in bank worth ₹ 24,000. It is increasing at the rate of 5% every year. What will be the growth in his investment after 3 years?
   c) What is the 20% of 150 ?
   d) Alfred buys an old scooter for ₹ 4700 and spend ₹ 800 on its repairs. If he sells the scooter for ₹ 5800, his gain percent is what?
   e) Write the steps of LPP formulation
   f) Explain the North - west corner method (NWCM) method of TP?

Q5) Attempt any one out of two: **[1 × 6 = 6]**

a)   Determine an initial basic feasible solution to the following transportation
     problem by using VAM method.

		Destination				
		D_1	D_2	D_3	D_4	Supply
	A	11	13	17	14	250
Source	B	16	18	14	10	300
	C	21	24	13	10	400
	Demand	200	225	275	250	

OR

b)   Compute the inverse of A :-

Where $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$

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