KRISHNA INSTITUTE OF SCIENCE \& COMMERCE
COLLEGE CODE - 384
B.Com (Part-I) 2021-22

Model Test Paper
Subject:-Business Mathematics
Max. Marks : 75
Time: 3 Hrs
Attempt all the five questions. One question from each Uni compulsory.

## Unit - I

1. Solve the following linear programming problem by graphic methc

| Maximize : $\mathrm{Z}=80 \mathrm{x}_{1}+100 \mathrm{x}_{2}$ |  |
| :--- | :--- |
| Such that: | $\mathrm{X}_{1}+\mathrm{X}_{2} \leq 720$ |
|  | $5 \mathrm{X}_{1}+4 \mathrm{X}_{2} \leq 1800$ |
|  | $3 \mathrm{X}_{1}+\mathrm{X}_{2} \leq 900$ |
| AND | $\mathrm{X}_{1}, \mathrm{X}_{2} \geq 0$ |

[15Marks]
Or
a) Solve the following equations by elimination method :

$$
5 x+2 y=22, \quad x \quad-y=3 \quad[5 \text { Marks }]
$$

b) Solve by cross - multiplication (cramer's method) :

$$
\begin{gathered}
4 x+5 y=14,3 x-7 y=-11 \quad[10 \text { Marks }] \\
\underline{\text { Unit - II }}
\end{gathered}
$$

2. Evaluate using log tables :

$$
\frac{(0.7634)^{1 / 3}}{\sqrt{272.3 \times 15.2}}
$$

Simplify: $\left[\begin{array}{lll}2 & 3 & 4 \\ 1 & 5 & 6\end{array}\right]\left[\begin{array}{ccc}1 & -1 & 0 \\ 2 & 0 & 1 \\ 1 & -1 & 1\end{array}\right]\left[\begin{array}{l}1 \\ 2 \\ 7\end{array}\right]$

## Unit - III

3. a) In what time the simple interest will be Rs 900 on Rs 1200 at the rate of $15 \%$ per annum?
[7.5 Marks]
b) Rs 8,000 amount to Rs 9,261 in three year. Find the compound interest rate percent p.a.?
[7.5 Marks]
Or
a) A sum of money was borrowed and paid back in two annual installments of Rs 5,400 and Rs 11,664 respectively. The rate of compound interest was $8 \%$ per annum . What sum was borrowed?
[15 Marks]

## Unit - IV

4. a) The coins of Rs 5, Rs 2 and Rs 1 . Denomination in a bag have a ratio of $1: 3: 8$. In the aggregate the coins are worth Rs 380 . Find number of each denomination.
[7.5 Marks]
b) In a factory 6 workers, working eight hours a day, manufacture 4 gates in 20 days. If 9 workers work ten hours a day, in how many days will they manufacture 6 gates?

## [7.5 Marks]

Or
a) In one pot the ratio of milk and water is 3:5 and in another pot it is $6: 1$. In what ratio should the contents of the two pots be mixed so as to make the ratio between milk and water $7: 3$ ?
[7.5 Marks]
b) At present father's age is thrice than that of his son .6 year back his age was four times than that of the son. What will be the ratio of their ages after 6 years ?
[7.5 Marks]

## Unit -V

5. a) On the sale of Rs 30,000 , the salesman earned a commission of Rs 2,600 . His commission was $10 \%$ on cash sales and $5 \%$ on credit sales. How much was his cash sales ?
[7.5 Marks]
b) A fruit seller purchased some oranges at the rate of two oranges for Rs 3.60 and the same number of oranges at the rate of three oranges for Rs 3.60 . He sold them at the rate of 5 oranges for Rs 7. bearing a lose of Rs 5 . How many oranges did he purchase ?
[7.5 Marks]
Or
Solve the following transportation problem by North - West corner method :

| From <br> Shop | To customer |  | Availaible |  |
| :--- | :---: | :---: | :---: | :---: |
|  | $\mathrm{C}_{1}$ | $\mathrm{C}_{2}$ | $\mathrm{C}_{3}$ |  |
| A | 2 | 7 | 5 | 5 |
| B | 3 | 3 | 8 | 8 |
| C | 5 | 4 | 7 | 7 |
| D | 1 | 6 | 2 | 14 |
| Require. | 7 | 9 | 18 | 34 |

[15 Marks]

