

I Semester End Examination- March/April 2022

B.Voc. RM

Mathematics – Open Elective

Corporate Mathematics

Course Code: MAT10E01

Time: 2hrs

QP code:1203

Max. Marks: 60

Instruction: Answer all questions

I. Answer any SIX Questions: -

6 x 2 = 12

1. Solve for x ; $9x - 1 = x/2$
2. If $x + y = -36$ and $x = 3$, Then find y
3. Factorize: - $x^2 + 5x - 24 = 0$
4. Define Discrete Frequency Distribution.
5. For the following data calculate the median
23, 51, 81, 52, 47, 61, 55.
6. Find the Arithmetic Mean of first 12 Odd numbers.
7. Draw the Graph for $x, y \geq 0$ and $x \leq 1$
8. Define Objective Function in LPP.

II. Answer any Six Questions: -

6 x 8 = 48

1. a) Solve for x and y by Elimination Method, $10x + 3y = 77$
 $6x - 5y = 11$
b) Solve by Substitution Method, $x + y = 3$
 $4x - 3y = 24$ (5+3)
2. a) 7 Chairs and 4 Tables for a classroom cost of Rs.7010/-, while 5 Chairs and 3 Tables cost Rs.5080/-. Find the cost of each chair and that of each table.
b) Solve $x^2 + 4x + 16 = 0$ by using formula. (5+3)
3. In class test, the sum of Kamala's marks in Mathematics and English is 28 had she got 3 marks more in Mathematics and 4 marks less in English the product of the marks would have been 180. Find her marks in two subjects separately.
3. Calculate Variance and Standard Deviation from the following data:

Class Interval (C.I.)	0 – 5	5 – 10	10 -15	15 – 20	20 – 25
Frequency (f)	29	35	52	38	68

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5. a) Compute Harmonic Mean from the following data: -
125, 762, 38, 17, 0.27, 0.08, 12.25, 0.50

- b) Construct Histogram for the following Frequency Distribution by adjusting Highest class Interval Frequency:

Age Group	0 – 10	10 – 20	20 – 30	30 – 40
No. of Persons	70	40	160	115

(5+3)

6. Calculate Mode from the following Frequency Distribution: -

Income in (Rupees)	1000-2000	2000 – 3000	3000 – 4000	4000 – 5000	5000 – 6000	6000 – 7000
No. of Workers	15	18	30	17	18	22

7. a) Draw a Pie Diagram from the following data of the investment pattern in a year plan: -

Agricultural	30%
Irrigation and Power	24%
Small Industries	30%
Transport	16%

- b) Draw the Line Graph from the data relating to Foreign Trade of India during the given 5 years.

Year	Exports (Rs. in Crore)
1991	3300
1992	4000
1993	5700
1994	6300
1995	6700

(5+3)

8. Solve the following LPP using the Graphical Method: -

Maximize, $z = 3x + 4y$, subject to condition
 $x + 2y \leq 8$

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$$3x + 2y \leq 12 \quad \text{such that } x, y \geq 0$$

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