

**CDOE**  
**BACHELOR OF BUSINESS ADMINISTRATION (CBCS- 2018 COURSE)**  
**B.B.A. Sem-I : WINTER :- 2021**  
**SUBJECT: FOUNDATION OF MATHEMATICS & STATISTICS**

**Day : Friday**  
**Date 11/2/2022**

**W-18914-2021**

**Time : 02:00 PM-05:00 PM**  
**Max. Marks: 70**

**N.B.:**

- 1) Attempt Any **FOUR** questions from Section –I. Each questions carries 10 marks.
- 2) Attempt Any **TWO** questions from Section –II. Each questions carries 15 marks.
- 3) Answers to both the sections should be written in **SAME** answer book.
- 4) Use of non-programmable **CALCULATOR** is allowed.

**SECTION-I**

**Q.1** Illustrate Importance of Diagrammatic and Graphical representation of data. **(10)**

**Q.2 a)** Solve the Linear system. **(05)**  
 $-2x + 4y = 16$

$$3x + y = 18$$

**b)** Discuss the concept of 'Annuity' with suitable example. **(05)**

**Q.3 a)** Evaluate  $i) {}^7P_4 \cdot {}^4P_2$   $ii) {}^4C_2 \cdot {}^3C_1$  **(05)**

**b)** Verify that  $AB \neq BA$  **(05)**

$$\text{If } A = \begin{bmatrix} -3 & 2 & 3 \\ 3 & 9 & 2 \\ 1 & 2 & -2 \end{bmatrix} \quad B = \begin{bmatrix} -3 & 2 & 2 \\ -1 & 2 & 2 \\ 3 & 2 & 1 \end{bmatrix}$$

**Q.4 a)** Find  $|A| = ?$  **(05)**

$$\text{If } A = \begin{bmatrix} 3 & 2 & -1 \\ -1 & 2 & 3 \\ 0 & 2 & 3 \end{bmatrix}$$

**b)** Rajendra has purchased two Printers for a total of Rs. 22,000. He sold one of them at a gain of 6% and the other at a loss of 5% but he realize that, he has neither gain nor loss in total transaction. Find C. P. of each Printer. **(05)**

**Q.5** Write short notes on Any **TWO** of the following: **(10)**

- a)** Population and Samples
- b)** Inferential and Descriptive statistics
- c)** Commission.

**P. T. O.**

## SECTION-II

**Q.6 a)** How much tax will be collected on a luxury item costing Rs. 12, 750? If the rate is 7% up to Rs. 10,000 and 10% tax on the amount over Rs. 10,000? (07)

**b)** Construct: (08)

- i) Histogram and
- ii) Less than Ogive curve for a table as below.

Percentage of Marks	60-65	65-70	70-75	75-80	80-85
Number of Students	25	30	35	40	45

**Q.7 a)** Describe various operations of Matrix with suitable example of each type. (05)

**b)** The compound interest on a sum for 2 years is Rs. 832 and the simple interest on the same sum for the same period is Rs. 800. (10)

- i) Find the rate of interest
- ii) The sum
- iii) Difference between the compound interest and simple interest

**Q.8 a)** If  $|A| = 0$  then find value of 'x'. (08)

$$\text{for } A = \begin{bmatrix} -3 & 2 & x \\ 0 & 2 & 5 \\ 3 & 2 & 2 \end{bmatrix}$$

**b)** Discuss various Methods of Data collection with advantages and Limitations of each Method. (07)

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