

BACHELOR OF BUSINESS ADMINISTRATION (CBCS - 2018 COURSE)

B.B.A. Sem-I : WINTER- 2022

SUBJECT : FOUNDATION OF MATHEMATICS & STATISTICS

Day : Friday

Time : 02:00 PM-05:00 PM

Date : 16-12-2022

W-18811-2022

Max. Marks : 60

N.B.

- 1) Attempt any **THREE** questions from Section – I and any **TWO** questions from Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Use graph paper **WHEREVER** necessary.
- 5) Answers to both the sections should be written in **SAME** answer book.

SECTION – I

Q.1 a) By selling 150 mangoes, a fruit seller gains the selling price of 30 mangoes. (06)
Find the gain percent.

b) Mr. Mahajan lent ₹ 10,000 to two persons in two parts. The first man (06)
borrowed at 5% and the second person borrowed 6% interest per annum. If
Mr. Mahajan receives ₹ 12,240 as total amount after 4 years then what sum
was borrowed by each of the two persons?

Q.2 a) If, $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 4 & -3 \end{bmatrix}$ and $B = \begin{bmatrix} -2 & -3 \\ 1 & 0 \\ -2 & 4 \end{bmatrix}$ (06)

Then find the matrix C. Given that, $A + B + C = 0$ where 0 represents zero matrix.

b) If ${}^{n+1}P_3 = 10 \cdot {}^{n-1}P_2$ then what is value of 'n'. (06)

Q.3 a) Represent the adjoining distribution of marks of 100 students in the (06)
examination by histogram.

Marks Obtained	No. of Students
Less than 10	4
Less than 20	6
Less than 30	24
Less than 40	46
Less than 50	67
Less than 60	86
Less than 70	96
Less than 80	99
Less than 90	100

b) What are the advantages of Diagrammatic and Graphical Representation of (06)
data?

Q.4 a) Show that $AB \neq BA$. (06)

$$\text{If } A = \begin{bmatrix} -2 & 3 & 1 \\ 2 & 1 & 0 \\ 2 & 2 & 1 \end{bmatrix} \text{ and } B = \begin{bmatrix} -3 & -2 & -1 \\ 1 & 4 & 2 \\ 2 & 3 & 0 \end{bmatrix}$$

b) Define Annuity with their different types and Applications. (06)

P.T.O.

- Q.5** Write short notes on **ANY TWO:** (12)
- a) Frequency Polygon
 - b) Payroll
 - c) Statistical Population

SECTION – II

- Q.6** a) A profit of 30% was made on the selling price of clock, purchased at ₹140 (06)
after giving 20% trade discount and 20% cash discount. What is the list price of the clock?
- b) Find the principal amount for which the difference of simple interest and (06)
compound interest is ₹ 20 at 4% for 2 years.
- Q.7** a) Find the value of 'x' (06)
- $$\text{if } \begin{vmatrix} (2+x) & (3+x) & (4+x) \\ 1 & 2 & -1 \\ 2 & 1 & 3 \end{vmatrix} = 0$$
- b) In how many ways can 10 men stand in a row such that (06)
- 1) two particular men always stay together?
 - 2) two particular men don't stay together?
- Q.8** a) Discuss different types of the data sources with suitable example. (06)
- b) Two companies have shares of 12% at 124 and 16% at 145. In which of the (06)
shares would the investment be more profitable?

* * *