

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)

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

SUBJECT : BUSINESS MATHEMATICS

Day : Friday

Time : 10:00 AM-01:00 PM

Date : 16-12-2022

W-18755-2022

Max. Marks : 60

N.B.

- 1) **Q.No. 4** from Section-I is **COMPULSORY**.
- 2) Attempt **ANY TWO** questions from Q.No. 1 to Q. No. 3 in Section – I.
- 3) Attempt **ANY TWO** questions from Q.No. 5 to Q. No. 7 in Section – II.
- 4) Figures to the **RIGHT** indicate **FULL** marks.
- 5) Answers to both the sections should be written in **SAME** answer book.

SECTION – I

- Q.1** Find the power (A) of $A = \{1,2,3,4,5\}$. (12)
- Q.2** Find the truth table for : (12)
- i) $(p \rightarrow q) \leftrightarrow (\sim q \rightarrow \sim p)$.
 - ii) $(p \wedge q) \rightarrow (p \vee q)$.
- Q.3** If $A = \begin{bmatrix} 3 & 2 \\ 1 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 4 & 0 \\ 2 & 1 \end{bmatrix}$, $C = \begin{bmatrix} -2 & -3 \\ 1 & 4 \end{bmatrix}$, then find : (12)
- i) $(A+B)C = AC + BC$
 - ii) $A+B = B + A$.
- Q.4** Write short notes on **ANY TWO** of the following : (12)
- a) Conditional probability
 - b) Permutation
 - c) Logic gates
 - d) Venn diagram

SECTION – II

- Q.5** Probability that a man will be alive 25 years is 0.3 and the probability that his wife will be alive 25 years is 0.4. Find the probability that (12)
- i) Both will be alive for 25 years
 - ii) Only the man will be alive
 - iii) At least one of them will be alive.
- Q.6** Find the number of distinct permutations that can be formed from all the letters of word. (12)
- i) SUPER
 - ii) BUTTER
 - iii) SWIMMINMG

- Q.7** Find inverse of the matrix using adjoint method $A = \begin{bmatrix} 1 & 0 & -4 \\ 0 & -1 & 2 \\ -1 & 2 & 1 \end{bmatrix}$. (12)
