S-884

Total Pages : 4 **Roll No. ----------**

BBA-102

Business Mathematics

Bachelor of Business Administration (BBA)

1st Semester, Examination 2022(Dec.)

Time: 2 Hours Max. Marks: 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section – A

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

[2 x 19 = 38]

P.T.O.

Q.1. Show that every square matrix can be uniquely expressed as the sum of a symmetric and skew symmetric matrix.

Q.2. Find the inverse matrix by using elementary column operation

$$A = \begin{pmatrix} 2 & 1 & 3 \\ 4 & -1 & 0 \\ -7 & 2 & 1 \end{pmatrix}$$

Q.3. Explain the arithmetic progression (A.P). Also explain the sum of A.P. and arithmetic mean and insert 'n' arithmetic means between two given number.

Q.4. Define Venn Diagram and its uses with example.

Q.5. Show that the total number of ways in which it is possible to form groups by taking some or all n thing $(2^n - 1)$.

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4 x 8 = 32]

Q.1. Let A and B be symmetric matrices of same order then show that

(a) A + B is symmetric matrix

(b) AB + BA is symmetric matrix

Q.2. Explain the multiplication properties of matrix with example.

Q.3. Write the business application of matrices.

Q.4. Find the number of ways of selection 4 letters from the word EXAMINATION.

P.T.O.

Q.5. A group consists of 4 girls and 7 boy, show that in how many ways can a team of 5 members be selected which has

(a) No girls

(b) At least one boy and one girl

Q.6. The number are in G.P., their product is 64 and sum is $\frac{124}{5}$. Find them.

Q.7. Find the 3 G.M. between 1 and 81.

Q.8. Explain the union of sets and its properties.

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