A–1069

Total Pages : 3 **Roll No. .....**

BBA–102

Bachelor of Business Administration (BBA)

(Business Mathematics)

1st Semester Examination, 2024 (June)

Time : 2:00 Hrs. 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. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

(Long Answer Type Questions) 2×19=38

***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.

1. Calculate the union and intersection of sets A {1, 3, 5, 7} and B = {2, 3, 6, 7}. Discuss the importance of set theory in problem-solving and decision-making processes in business management.

2. Find the sum of the first 10 terms of the geometric progression 2, 4, 8, ... Explain the relevance of geometric progressions in business modeling and financial forecasting.

3. Discuss the principles of permutations and combinations and their relevance in business decision-making.

4. Solve the system of linear equations :

$$3x + 2y = 11 \text{ and } x - y = 1$$

5. Describe the significance of logarithms in business calculations, especially in financial modeling.

Section–B

(Short Answer Type Questions) 4×8=32

***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.

1. Given sets A = {2, 4, 6} and B = {1, 2, 3, 4}, calculate $A \cup B$ and $A \cap B$.

2. Explain the difference between permutations and combinations, with examples.

3. Calculate the number of different ways to arrange the letters in the word "STATISTICS."

4. Discuss the importance of differentiation in business analytics, particularly in understanding cost functions.

5. Describe the properties of determinants and their role in solving business problems.

6. Find the inverse of the matrix [[4, 7], [2, 6]] and discuss its relevance in matrix algebra.

7. Solve for x in the logarithmic equation $\log_2 (8x) = 6$ rate of $\log_2 = 0.301$.

8. Explain the role of Business Mathematics in business decision making ?

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