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BBA–102

BBA Ist Semester
Examination Dec., 2023

BUSINESS MATHEMATICS

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 there in. ***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. Discuss the concept and various types of sets, including their representation and applications in real-world scenarios.

2. Explain the significance of arithmetic, geometric, and harmonic progressions in business contexts, with an emphasis on their practical applications.

3. A company has 5 different managerial positions and 10 candidates. How many ways can these positions be filled ? Additionally, if the company decides to form a committee of 3 members from these 10 candidates, how many different committees can be formed ?

4. Discuss the role and applications of matrices in business decision-making, focusing on the types, properties, and operations of matrices.

5. Explain the concept of logarithms and their applications in solving business problems.

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. Define Cartesian products of sets and illustrate their use with an example

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2. Solve for x in the logarithmic equation :

$$(\log_2 x) + \log_2 8 = 4,$$

when value of log 2 = 0.3010.

3. Discuss the application of the binomial theorem in business calculations.

4. Explain the process and significance of differentiation in analyzing business functions.

5. Describe the use of Venn diagrams in illustrating relationships between sets.

6. Discuss the business implications of using geometric progressions in financial forecasting.

7. Calculate the number of different 5-card hands that can be drawn from a standard deck of 52 cards.

8. Calculate the determinant of the matrix [[3, 4] , [2, 1]] and discuss its significance in matrix algebra.

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