Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF COMMERCE
MID TERM EXAMINATION - OCT 2023

Semester : Semester I - 2023
Course Code : BSC2050
Course Name : Sem I - BSC2050 - Basic Mathematics for Economics
Program : BSE

Date : 31-OCT-2023
Time : 9:30AM - 11:00AM
Max Marks : 50
Weightage : 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **(5 X 2 = 10M)**

1. What is the relavance of 'e' as base in natural exponential function

(CO1) [Knowledge]

2. Discuss the rules of inequality signs and summation operator

(CO2) [Knowledge]

3. Discuss the common rules of exponents and common logarithmic operations

(CO1) [Knowledge]

4. Find $\frac{X^2 + 5XY - 4Y^2}{X^2 - 16Y^2} - \frac{2XY}{2X^2 + 8XY}$

(CO1) [Knowledge]

5. Differentiate identity matrix and null matrix

(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **(2 X 10 = 20M)**

6. A firm sells its product in three markets A, B and C. In each of these markets, the product is sold at different prices, Rs. 15, Rs. 20 and Rs. 25 respectively. Average cost of the product is Rs. 12 and the transportation cost per unit to each of these markets A, B, and C are Rs. 1, Rs.2 and Rs.3 respectively. Compute the profit earned from each of these markets and the firm's overall profits, provided the firm sells 600 units in A, 400 units in B and 100 units in C.

(CO1) [Comprehension]

7. Discuss commutative, associative and distribution laws of matrix algebra

(CO3) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION **(1 X 20 = 20M)**

8. Given matrix $A = \begin{bmatrix} 3 & 6 \\ 2 & 4 \end{bmatrix}$ B = $\begin{bmatrix} -1 & 7 \\ 8 & 4 \end{bmatrix}$ C = $\begin{bmatrix} 3 & 4 \\ 1 & 9 \end{bmatrix}$ verify that

1. (A+B) + C = A + (B+C)
2. (A+B) - C = A + (B-C)

(CO2) [Application]