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**Presidency University**

**Bengaluru**

**SCHOOL OF INFORMATION SCIENCE**

**SUMMER TERM ENDTERM EXAMINATION AUG-2024**

**Date**: 8/08/2024

**Time**: 9.30AM-12.30PM

**Max Marks**: 100

**Weightage**: 50%

**Semester**: Semester I – 2024

**Course Code**: MAT 2007

**Course Name**: Applied Mathematics

**Program**: BCA

**Instructions:**

1. *Read all the questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculators are permitted.*

**Part A**

**Answer any FIVE questions. (5Qx 4M=20M)**

1. If  , then the value of  is \_\_\_\_\_\_\_\_. (C.O.No.4) [Knowledge]
2. Find the determinant of the matrix . (C.O.No.4) [Knowledge]

1. Convert the following angle measures
   1. Degrees to radians of b. Radians to degrees of .

(C.O.No.1) [Knowledge]

1. Find the value of the following
   1. b. (C.O.No.1) [Knowledge]
2. Write the value of .

(C.O.No.1) [Knowledge]

1. Differentiate with respect to . (C.O.No.2) [Knowledge]
2. Find the integral of  with respect to x . (C.O.No.3) [Knowledge]

**Part B**

**Answer any FIVE questions. (5Qx10M= 50M)**

1. Prove that (C.O.No.4) [Comprehension]
2. If , then find .
3. Find the rank of the matrix , by reducing into row echelon form.

(C.O.No.4) [Comprehension]

1. Find the derivative of the function with respect to .

(C.O.No.2) [Comprehension]

1. Verify the mean value theorem for the function in (1, 4).

(C.O.No.2) [Comprehension]

1. Evaluate the following . (C.O.No.3) [Comprehension]

**Part C**

**Answer any TWO questions. (2Qx15M=30M)**

1. Find the inverse of the matrix (C.O.No.1) [Application]
2. Evaluate by using the partial fraction method. (C.O.No.3) [Application]
3. Solve the system of equations by Gauss elimination method

(C.O.No.4) [Application]