Roll No.: _____ **Enrolment No._____**

PARUL UNIVERSITY

FACULTY OF PHARMACY

B.PHARM FIRST SEMESTER

SECOND INTERNAL THEORY EXAMINATION: 2022-23

Subject Name: Remedial Mathematics
Subject Code: BP106RMT **Date: 27/2/2023**
Time: 12:00 To 1:15 **Total Marks: 30**

Instructions:

1. **Make suitable assumptions wherever necessary.**
2. **Figures to the right indicate maximum marks.**

Q.1 Attempt any 01 out of 02 questions. **10**

A) Solve : 4x – 3y + z = 5, 3x + 2y + z = 6, x + 2y + 3z = 7 using matrix method

B) Write division rule for derivative and find derivative of (1+sinx) / (1 – sinx) with respect to x.

Q.2 Attempt any 04 out of 06 questions. **20**

A) Find characteristic roots of $\begin{bmatrix} 2 & 5 \\ 1 & 5 \end{bmatrix}$.

B) If $A = \begin{bmatrix} 1 & 2 & 0 \\ -3 & 0 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & -1 & -3 \\ 3 & 2 & 4 \end{bmatrix}$ then find the solution of the matrix equation 2(X + A) + 3B = 0

C) If $A = \begin{bmatrix} 4 & 1 & 3 \\ 2 & 0 & 5 \\ 1 & 3 & 0 \end{bmatrix}$., $B = \begin{bmatrix} 2 & -1 & 0 \\ 0 & 4 & 3 \\ 2 & 1 & 5 \end{bmatrix}$ then verify $(A+B)^T = A^T + B^T$

D) The total number of units of three products P = 9, Q = 52, R = 0 that are processed by three machine A, B and C is given by matrix

$$\begin{matrix} & A & B & C \\ P \\ Q \\ R \end{matrix} \begin{bmatrix} 1 & 1 & 1 \\ 2 & 5 & 7 \\ 2 & 1 & -1 \end{bmatrix}$$

Determine the time taken by each machines to process product P, Q and R.

E) Write derivative of any five standard function with respect to x.

F) If $y = \log\left(\sqrt{\frac{x+a}{x-a}}\right)$ then find dy/dx

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