PARUL UNIVERSITY

FACULTY OF PHARMACY

B. PHARM FIRST SEMESTER

THEORY SECOND INTERNAL EXAMINATION: 2022-23

Subject Name: Remedial Mathematics
Subject Code: BP106RMT
Time: 12:00 To 1:15

Date: 27/2/2021
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 $\frac{1+sinx}{1-sinx}$ 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

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

Determine the time taken by each machine 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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