

Roll No.: _____

Enrolment No. _____

PARUL UNIVERSITY
PARUL INSTITUTE OF PHARMACY

B.PHARM FIRST SEMESTER · SECOND INTERNAL EXAMINATION: 2018-19

Subject Name: Remedial Mathematics

Subject Code: BP106RMT

Time: 2:35 pm to 3:50 pm

Date: 01/12/2018

Total Marks: 30

Instructions:

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

Q.1 Do as directed (10)

- (a) Using Cramer's rule solve the given system of linear equations

$$3x + y + z = 5$$

$$4x + 2y + 2z = 6$$

$$x + 2y + z = 4$$

- (b) Find the maxima & minima of the given function

$$f(x) = 2x^3 - 3x^2 - 12x + 5$$

OR

Q.1 Do as Directed (10)

- (a) Find the inverse of the given matrix $A = \begin{bmatrix} 1 & 2 & 1 \\ 3 & 2 & 3 \\ 1 & 1 & 2 \end{bmatrix}$

- (b) If $y = \frac{1 - \tan x}{1 + \tan x}$ then find $\frac{dy}{dx}$

Q.2 Answer the following questions(Any Four) (20)

- (a) If $A = \begin{bmatrix} 3 & 2 & 1 \\ 0 & 1 & 0 \\ 7 & 8 & 9 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & -2 & 0 \\ 1 & 1 & -1 \\ 2 & 2 & 2 \end{bmatrix}$ and $2A + C = B$, then find the matrix C.

- (b) If $y = ae^{3x} + be^{2x}$ then prove that $\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = 0$

- (c) If $A = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 \\ 3 & 2 \end{bmatrix}$, find AB and BA . Is $AB = BA$?

- (d) If $y = x^x$ then find the value of $\frac{dy}{dx}$

- (e) Show that $A = \begin{bmatrix} 2 & 2 \\ 5 & 1 \end{bmatrix}$ is a solution of the matrix equation $A^2 - 3A - 8I = O$.