

Name: _____

Enrolment No. _____

PARUL UNIVERSITY

PARUL INSTITUTE OF PHARMACY

B.PHARM FIRST SEMESTER · SECOND INTERNAL EXAMINATION: 2020-2021

Subject Name: Remedial Mathematics

Subject Code: BP106RMT

Time: 02:00 to 03:15 PM

Date: 18/02/2021

Total Marks: 30

Instructions:

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

Q.1 Long Answers: (Any One)

- (1) (a) If $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$ then find AB and BA if possible. 10

Also find adjoint of matrix B.

(b) Solve using matrix inversion method

$$\begin{bmatrix} 2 & -3 \\ 3 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -5 \\ 9 \end{bmatrix}$$

- (2) If $y = A \cos Px + B \sin Px$ then prove that 10
 $\frac{d^2y}{dx^2} + P^2y = 0$

Q.2 Short Answers: (Any Four)

- (1) If $\log \left(\frac{x+y}{2} \right) = \frac{1}{2} (\log x + \log y)$ then prove that $x = y$. 05

- (2) If function $g : A \rightarrow B$ where $A = \{-1, 1, 0, 2, 3\}$ and $B = \{1, 0, 4, 9\}$ defined by $g(x) = x^2$ check whether the given function is 05

(i) One-one or not ?

(ii) Onto or not ?

(iii) Find the range of the given function.

- (3) Evaluate $\lim_{x \rightarrow 5} \frac{x^3 - 125}{x^2 - 25}$ 05

- (4) Find the equation of line passing through the origin and parallel to $3x - 2y - 9 = 0$. 05

- (5) If the distances between $A(7, m)$ and $B(3, -2)$ is 5 then find the value of m 05
