

**End Semester/Reappear (Semester I) Examination December 2024**

**Programme: B. Pharm**  
**Course: Remedial Mathematics**  
**Course Code: BP106RMT**  
**Enrollment No: \_\_\_\_\_**

**Full Marks: 35**  
**Time: 2 Hrs.**

**Section I**

1. **Short Answer type questions. Answer any five.** **5 x 5 = 25**
- a. Evaluate  $\log_6 2^{16} + (\log_4 2 - \log_6 6)/\log_4 9$ . (CO1) Understand
- b. If  $\begin{bmatrix} a+b & 2 \\ 5 & ab \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & 8 \end{bmatrix}$ , find the value of a and b. (CO2) Understand
- c. Find  $dy/dx$  when  $x = a(t + \sin t)$  and  $y = a(1 - \cos t)$ . (CO3) Understand
- d. If  $xy = x^3 + y^3$  find  $\frac{dy}{dx}$ . (CO3) Understand
- e. Evaluate  $\int (5x^2 + 2x^{-5} - 7x + \frac{1}{\sqrt{x}} + \frac{5}{x}) dx$  (CO4) Remember
- f. Find the Laplace Transform of  $(t^5 + \sin t + e^{3t})$ . (CO4) Understand
- g. If  $A = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}, B = \begin{bmatrix} 2 & 1 \\ 1 & 0 \end{bmatrix}$  find  $(A + B)^2$ . (CO2) Understand

**Section II**

2. **Long Answer type question.** **1 x 10 = 10**

If  $y = \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \dots \dots \dots \infty}}}}$  find  $\frac{dy}{dx}$ . (CO3) Analyzes

or

If  $x^3 + y^3 = \sin(x + y)$ , find  $\frac{dy}{dx}$  (CO3) Analyzes

**Course Outcome**

Upon completion of the course the student shall be able to:

- CO 1. Apply mathematical concepts and principles to perform computations for Pharmaceutical Sciences.
- CO2. Create, use and analyze mathematical representations and mathematical relationships.
- CO3. Communicate mathematical knowledge and understanding to help in the field of Clinical Pharmacy.
- CO4. Perform abstract mathematical reasoning