

End Semester/Reappear (Semester I) Examination December 2022

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

- Solve for y in term of x,  $\log 2^x + \log 2^y = 1$
- Evaluate:  $\begin{vmatrix} 1 & 1 & 1 \\ x & y & z \\ x^2 & y^2 & z^2 \end{vmatrix}$
- Determine dy/dx when  $x = a(t + \sin t)$  and  $y = a(1 - \cos t)$ .
- Find equation of a line passing through the points  $(-1, 1)$  and  $(2, -4)$ .
- Evaluate  $\int (5x^2 + 2x^{-5} - 7x + \frac{1}{\sqrt{x}} + \frac{5}{x}) dx$
- Find Laplace Transform of  $(t^5 + \sin t + e^{3t})$
- Discuss upper and lower triangular matrix with example.

**Section II**

Long Answer type questions. Answer any one.

1 x 10 = 10

- Find partial fraction of  $\frac{x}{(x+1)(x^2+1)(x-2)}$
- Find all the points of local maxima and local minima and the corresponding maximum and minimum values of the function  $f(x) = (-3/4)x^4 - 8x^3 - (45/2)x^2 + 105$

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