

**B.PHARM.  
FIRST SEMESTER  
REMEDIAL MATHEMATICS  
BP-106RMT**

Duration : 1.30 hrs.

Full Marks : 35

**[ Answer question no. 1 & any five from the following ]**

1. a. If  $y = e^x \log x$  then find the value of  $y_2 + 3y_1 - y$  3+5+2=10
- b. Find partial fractions of the following:  
$$f(x) = \frac{x + 3}{(x + 7)(x - 1)(x - 3)}$$
- c. Find  $L^{-1}\left(\frac{3}{S^2 + 7}\right)$
2. a. Find  $\text{Sec}870^\circ$  2+3=5
- b. Evaluate  $\int \frac{\text{Cos } x + 3}{\text{Sin } x + 3x + 10} dx$
3. a. Find  $\int \tan^2 x dx$  2+3=5
- b. Show that  $\text{Log}_a\left(\frac{m}{n}\right) = \text{Log}_a m - \text{Log}_a n$
4. a. Evaluate  $\int \left(\frac{9}{\sqrt{x}} - \text{Sin}7x - 6e^{-9x} + 10\right) dx$  2+3=5
- c. Evaluate  $\int x \log x dx$
5. a. Find  $\frac{dy}{dx}$  if  $y = \sqrt{x+3} \log(x^2 + 1)$  3+2=5
- b. Find the value of:  
 $\log_3 81 + \log_5 25 + \log_2 1024$
6. a. Find the value of  $\log_{0.1} 0.0001$  2+3=5

b. Find  $A^{-1}$

$$\text{if } A = \begin{pmatrix} 2 & 1 & 3 \\ -1 & 2 & 4 \\ 5 & 1 & 6 \end{pmatrix}$$

7. a. What are the different forms of Straight lines?

3+2=5

b. Find  $\frac{dy}{dx}$  if

$$f(x) = e^{x^2+3x+5}$$

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