



## FACULTY OF PHARMACY

B. Pharmacy I-Semester (PCI) (Main) Examination, February 2018

Subject : Remedial Mathematics

Time : 1 ½ Hours

Max. Marks: 35

Note: Answer any one question from Part – A, any five questions from Part – B.

## PART – A (1x10=10 Marks)

Answer any ONE of the following.

- 1 (a) If  $(2.3)^x = (0.023)^y = 10000$  then find the value of  $\frac{1}{x} - \frac{1}{y} = ?$   
 (b) Verify the following points are collinear (1,2), (3,4) (5,6) (7,8) ?
- 2 (a) Solve  $\tan y \cdot e^x dx - \sec^2 y (1+e^x) dy = 0$   
 (b) Solve the following simultaneous linear equations by using matrix Inversion method.  
 $x+y+z=6$ ;  $x-y+z=2$ ;  $2x-y+3z=9$

## PART- B (5x5=25 Marks)

Answer any FIVE Questions.

- 2 Show that  $\lim_{x \rightarrow 0} \frac{\cos ax - \cos bx}{x^2} = \frac{b^2 - a^2}{2}$
- 4 If  $A = \begin{pmatrix} -1 & -2 & -2 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{pmatrix}$  then show that  $\text{adj}(A) = 3A^T$  and find  $A^{-1}$ ?
- 5 If  $ax^2 + 2hxy + by^2 = 0$  then find  $\frac{d^2y}{dx^2}$ ?
- 6 Evaluate  $\int 2x \cos^2 x dx$ .
- 7 If  $L[f(t)] = f(s)$  then show that  $L[e^{at} f(t)] = f(s-a)$  and  $L[e^{-at} f(t)] = f(s+a)$
- 8 If  $x^{\log x} = \log x$  then show that  $\frac{dy}{dx} = \frac{y}{x} \left[ \frac{1 - \log x \cdot \log y}{(\log x)^2} \right]$
- 9 Write the applications of Remedial Mathematics especially, Logarithmic matrices. Differentiation and Integration in Pharmacy.

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