

[LM 806]

MAY 2018

Sub. Code: 3806

**PHARM. D DEGREE EXAMINATION**  
**(2009-2010 Regulation)**  
**FIRST YEAR**  
**PAPER VI – REMEDIAL MATHEMATICS**  
**Q.P. Code: 383806**

**Time : Three hours****Maximum : 70 Marks****I. Elaborate on:****(4 x 10 = 40)**

1. If  $A = \begin{pmatrix} 1 & 2 & 2 \\ 2 & 2 & 2 \\ 2 & 2 & 1 \end{pmatrix}$  then prove that  $A^2 - 4A - 5I = 0$
2. Find the equation of circle passing through the points (0, 1), (2, 3) and having the center on the line  $x - 2y + 3 = 0$ .
3. Prove that:  $\tan 3A - \tan 2A - \tan A = \tan A \tan 2A \tan 3A$ .
4. Evaluate:  $\int x \cos 2x \, dx$ .

**II. Write notes on:****(6 x 5 = 30)**

1. Solve for x if  $\begin{vmatrix} x & 5 \\ 7 & x \end{vmatrix} + \begin{vmatrix} 1 & -2 \\ -1 & 1 \end{vmatrix} = 0$ .
2. Find  $\frac{dy}{dx}$  if  $xy = c^2$ .
3. Prove that :  $\sec^2 A + \operatorname{cosec}^2 A = \sec^2 A \cdot \operatorname{cosec}^2 A$ .
4. Solve :  $(D^2 + 7D + 12)y = e^{2x}$ .
5. Determine the equation of straight line passing through (-1, 2) and having slope  $\frac{2}{7}$ .
6. Find L ( $t^3 + t^2 - 3t + 7$ ).

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