October 2011

[KZ 806] **Sub. Code: 3806**

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION
FIRST YEAR
PAPER VI – REMEDIAL MATHEMATICS
Q.P. Code : 383806

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Find the inverse of $\begin{vmatrix} 1 & -1 & 2 \\ -3 & 0 & 4 \\ 1 & 2 & 5 \end{vmatrix}$	**17**	**40**	**20**
2. Solve the differential equation $(D^2 - 4D + 4)y = 8(x^2 + e^{2x} + \sin 2x)$	**17**	**40**	**20**

II. Write notes on:

1. If $A = \begin{vmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{vmatrix}$ Show that $A^2 = A$.	**4**	**10**	**6**
2. Define i) Square matrix, (ii) Diagonal matrix, (iii) Transpose matrix.	**4**	**10**	**6**
3. Prove that $\tan 13A - \tan 9A - \tan 4A = \tan 13A \tan 9A \tan 4A$	**4**	**10**	**6**
4. Find the distance between the points, $(a\cos\alpha, a\sin\alpha)$ and $(a\cos\beta, a\sin\beta)$	**4**	**10**	**6**
5. Differentiate : $\frac{(x+3)(x-2)}{(x-1)(x-3)}$	**4**	**10**	**6**
6. Integrate: $\int \log x \, dx$	**4**	**10**	**6**
7. Solve: $(D^2+D+1)y=0$	**4**	**10**	**6**
8. Find laplace transform $F(t) = e^{2t} + 4t^3 - 2\sin 3t + 3\cos 2t$	**4**	**10**	**6**
9. Evaluate : $\int_{\square}^{2} (x^2 + 3x + 1)dx$	**4**	**10**	**6**
10. Solve $(D^2+6D+9)y=0$	**4**	**10**	**6**

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