Total No. of Questions :7] *[Total No. of Printed Pages :2*

Roll No .....

MA-112

B.Pharm., I Year II Semester

Examination, June 2016

Choice Based Credit System (CBCS)

Mathematics

Time : Three Hours

Maximum Marks: 60

Note: Attempt any five questions out of seven. Each question carries equal marks.

1. a) Evaluate, the determinant $\begin{vmatrix} 1 & 2 & 4 \\ -1 & 3 & 0 \\ 4 & 1 & 0 \end{vmatrix}$.

   b) Find values of λ for which the quadratic equation $2x^2 + 7x + 2$ has equal roots.

2. a) If $A = \begin{pmatrix} 0 & 6 & 7 \\ -6 & 0 & 8 \\ 7 & -8 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 0 & 1 & 1 \\ 1 & 0 & 2 \\ 1 & 2 & 0 \end{pmatrix}$, then find AB.

   b) Simplify without using log tables $\dfrac{8\log 2 - 2\log 4}{\log 2}$.

3. a) Find the differential coefficients of the following functions :

   i) $(2x + 3)(x + 1)$

   ii) $\dfrac{e^x + 1}{e^x - 1}$

   b) Find differential coefficient of the function x^x.

4. a) Integrate the followings :

   i) $\dfrac{1}{x^2 - 16}$

   ii) $\dfrac{x^3 + 3x + 4}{\sqrt{x}}$

   b) Using integrate by parts technique, evaluate $\int xe^x \cdot dx$.

5. a) Form the differential equation form the relation $y = a \sin ax + b$, where a and b are arbitrary constants.

   b) Solve the differential equation $\dfrac{dy}{dx} = -4xy^2$.

6. Write a short note on measures of dispersion. Also, calculate standard deviation of the following data :

x	0	4	5	8	9	13
f	5	6	1	4	7	2

7. a) Probability that a boy will pass examination is 3/5 and that for a girl it is 2/5. What is the probability that at least one will pass the examination?

   b) Two cards are drawn successively with replacement from a well-shuffled pack of 52 cards. Find the probability distribution of number a aces.

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