

I B.Pharmacy II Semester Supplementary Examinations, July. 2015
MATHEMATICS-II

Time: 3 hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Find the derivative of $y = x^{x^x}$
 (b) If $z = \sin(x + 2y)$ find $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$ [7+8]
2. (a) Find the derivative of $y = \sin x^{\tan x}$
 (b) If $u = x^3 + y^3 + z^3 + 3xyz$, then find $\frac{\partial u}{\partial x}$, $\frac{\partial u}{\partial y}$, $\frac{\partial u}{\partial z}$ [7+8]
3. (a) Find $\int (\cos 7x + 3x^5) dx$
 (b) Find the area bounded by the curve $y = x^2 - 1$, the x-axis and the ordinates $x=0, x=2$. [7+8]
4. (a) Evaluate $\int e^x \sin x dx$
 (b) Find the area between the ellipse $\frac{x^2}{9} + \frac{y^2}{16} = 1$ and the line $x+y=3$ [7+8]
5. (a) Form a differential equation from the relation $\sin^{-1} x + \sin^{-1} y = c$
 (b) solve $\frac{dy}{dx} = \frac{x[2 \log x + 1]}{\sin y + y \cos y}$ [7+8]
6. (a) Solve $(2x - y + 1) dx + (2y - x - 1) dy = 0$
 (b) Solve $(x + y + 1) \frac{dy}{dx} = 1$ [7+8]
7. (a) Find L [$\cos^2 t$]
 (b) Find L [$\sin^2 at$] [7+8]
8. (a) Find L ($e^{-t} [3\sin 2t - 5\cosh 2t]$)
 (b) Find L [$e^{-at} \sinh bt$] [7+8]

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