

Internal Assessment
Department of Science
Subject – Mathematics
Semester – 4th

Paper- DSC

Full Marks-15

1) Answer the following Questions:

a) Find the particular integral of the D.E $\frac{d^2y}{dx^2} + 9y = 5x^2$

b) Solve by the method of undetermined coefficients

$$\frac{d^2y}{dx^2} - \frac{dy}{dx} - 2y = 8$$

c) Find the general solutions of the D.E $\frac{d^3y}{dx^3} + 2\frac{d^2y}{dx^2} + \frac{dy}{dx} = e^{2x}$

d) Prove that $\sin 2x$ and $\cos 2x$ are the solutions of $\frac{d^2y}{dx^2} + 4y = 0$
and these solutions are linearly independent.

e) Define Wronskian.