

S. R. Fatepuria College
Belkanger, Murshidabad
Mathematics (programme course): MATH-G-CC-T-02

Course title: Differential Equation

Time: 40 mins

Marks: 10

Answer any two questions (2x5=10):-

① Test whether the equation $(x+y)^2 dx - (y^2 + 2xy - x^2) dy = 0$ is exact and hence solve. (1+4)

② Solve $\frac{dy}{dx} - \frac{\tan y}{(1+x)} = (1+x)e^x \sec y$.

③ Obtain the differential equation of $(x-\alpha)^2 + (y-\beta)^2 = r^2$ where α, β are arbitrary constants and r is a fixed constant.