Math-202 Semester-122 QUIZ II

NAME: S.No. ID:

Maximum Marks: 15 Section:4 Time Allowed: 40 minutes

(1) Find the integrating factor that makes the differential equation

$$(5x^2 - xy + x^3)dx + (x^2 + yx^3)dy = 0 \quad \text{exact.}$$

(2) Convert the differential equation into linear differential equation

$$(6x + 1)y^2 \frac{dy}{dx} + 2y^3 = 3x^2.$$

(3) Solve the differential equation by using an appropriate substitution

$$xdy = (y + \sqrt{x^2 + y^2})dx.$$