

The LNM Institute of Information Technology

Math-II, Quiz-I: Section-B

Time: 20Minutes

Maximum Marks: 10

- **Problem 1.** Reduce the Van der Pol equation

$$\frac{d^2x}{dt^2} + \mu(x^2 - 1)\frac{dx}{dt} + x = 0$$

into a first order system of differential equation of the form $X' = AX$.

- **Problem 2.** Find the radius of convergence of the power series

$$\sum_{m=0}^{\infty} \frac{(2m)!}{(m!)^3} x^m.$$