

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER – IV • EXAMINATION – WINTER 2012

Subject code: X 40904

Date: 01/01/2013

Subject Name: Theory of Electromagnetics

Time: 02.30 pm - 05.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain Cartesian Co-ordinate system. Also explain transformation of vector from Cartesian to cylindrical co-ordinate system. **07**
 (b) State and explain Biot Savart's Law. **07**
- Q.2** (a) State and explain Coulomb's law with necessary equation. **07**
 (b) State and explain divergence theorem. **07**
OR
 (b) Write in brief electrostatic precipitator. **07**
- Q.3** (a) Explain Stoke's theorem. **07**
 (b) State and explain Ampere's circuit law. **07**
OR
- Q.3** (a) Write short note Magneto Hydro Dynamic Generator. **07**
 (b) Explain corona phenomenon. **07**
- Q.4** (a) Explain Magnetic Prospecting. **07**
 (b) Explain curl of vector with necessary equation. **07**
OR
- Q.4** (a) State and explain Laplace Equation. **07**
 (b) State and explain Poisson's Equation. **07**
- Q.5** (a) Develop expression for capacitance for conducting sphere. **07**
 (b) Write short note on equipotential surface. **07**
OR
- Q.5** (a) Write a short note on Finite Elements method. **07**
 (b) State and explain Gauss's law. **07**
