(Following Paper ID and Roll No. to be filled in your answer book)

Paper ID: 3081 **Roll No** | | | | | | | | | | |

B.Tech

IVth SEM. EXAMINATION, 2009-2010

ELECTROMAGNETIC FIELD THEORY

Time:3hrs. ***Max. Marks:100***

Note : Attempt all questions. All questions carry equal marks. Assur missing data if any.

Q.1 Attempt any two parts of the followings.

(a) Describe the spherical and cylindrical coordinate system. Ho it is converted in other coordinate system.
(b) Describe the gradient of a scalar field.
(c) Explain curl of a vector field and stokes theorem

Q.2 Attempt any two parts of the followings.
(a) What do you mean by electric potential? Explain it.
(b) Describe the electric flux density and dielectric constant.
(c) Describe the boundary condition in electro static field.

Q.3 Attempt any two parts of the followings.
(a) Describe the amperes circuital laws of magneto static field.
(b) Define biot-savarat law and what are its applications.
(c) State and explain the Maxwell's equation in differential and integral form.

Q.4 Attempt any two parts of the followings.

(a) Discuss and proof the Poynting's Theorem and also menti its application.

(b) Compute the power carried by an electric field of E = 10 Sin (108 – 1.2x) kV/m.

(c) Determine the average power density and the value of associated magnetic field, if the break down electric field of the medium is 10V/m.

Q.5 Attempt any two parts of the followings.

(a) Describe the wave characteristics of finite transmission line

(b) What is a smith chart and why it is useful in making transmission line calculation.

(c) What is meant by distortionless line. Compare the advantage and disadvantage of coaxial cables and two wire transmission line.