

Code: **ECMC1T1**

I M.Tech-I Semester-Regular Examinations-April 2013

**TIME HARMONIC ELECTROMAGNETIC FIELDS
(MICROWAVE & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Marks: $5 \times 14 = 70$

Answer any FIVE questions. All questions carry equal marks

1. (a) Explain AC behavior of circuit elements? 8 M
(b) Discuss Maxwell's equations ? 6 M
2. (a) Explain transmission line concepts ? 7 M
(b) Write about behavior of waves in perfect dielectric? 7 M
3. (a) Briefly explain the concepts of waveguide ? 7 M
(b) Illustrate resonator concept using rectangular cavity? 7 M
4. (a) Write short notes on reciprocity and induction theorem ? 7 M
(b) Briefly explain the source concept ? 7 M

5. (a) Explain Green's function ? 7 M
- (b) Derive integral equations in terms of vector potentials
A and F ? 7 M
6. (a) What are alternate mode sets? 7 M
- (b) Write about modal expansion of fields? 7 M
7. (a) Write short Two-Dimensional and three-Dimensional
Radiation? 7 M
- (b) Give a brief description of the sources of cylindrical
waves? 7 M
8. (a) Justify space as a Waveguide? 7 M
- (b) Explain in detail about wave transformations. 7 M