PVP 12

Code: **ECMC1T1**

I M.Tech - I Semester – Regular/Supplementary Examinations
January 2017

TIME HARMONIC ELECTROMAGNETIC FIELDS
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) State and explain constitutive relationships. 7 M

   b) Explain AC characteristics of Matter. 7 M

2. a) Explain behavior of waves in lossy matter. 7 M

   b) Explain about intrinsic wave constants. 7 M

3. a) Write a short notes on wave guide concepts. 7 M

   b) Show that a source in unbounded space is characterized by a radiation of energy. 7 M

4. a) Explain in detail about image theory. 7 M

   b) Explain the equivalence principles. 7 M

5. a) Explain reaction theorem. 7 M

b) Derive integral equation in terms of vector potentials A and F. 7 M

6. a) Explain model expansion of fields. 7 M

b) Discuss the concept of partially filled wave guide. 7 M

7. a) Briefly discuss about circular cavity. 7 M

b) Explain the concept of three dimensional radiation. 7 M

8. a) Explain in detail about the sources of spherical wave. 7 M

b) Consider an air filled spherical resonator of radius 10cm bounded by copper walls. Determine the first five resonant frequencies and the Q of dominant mode. 7 M