Code: **ECMC1T4**

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

MICROSTRIP COMPONENTS & MICROSTRIP ANTENNAS
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours   Max. Marks: 70
Answer any FIVE questions.   All questions carry equal marks

1. a) Explain the following terms related to microstrip Antenna
                                                                    8 M
   (i) Return loss   (ii) Characteristic impedance
   (iii) Percentage bandwidth   (iv) Substrate materials

   b) A 1.0mm thick fused quartz substrate with permittivity
      3.8 F/m is used to construct a microstrip circuit . If the line
      width have to within the limits of 0.2mm and 6 mm
      find the characteristic impedance values?   6 M

2. a) Write in detail about quasi lumped elements.   7 M

   b) Discuss about planar circular spiral inductor.   7 M

3. a) Write about microstrip high pass filter prototype models
      for Butterworth response.   7 M

b) Explain about microstrip terminations.   7 M

4. a) Discuss about various Microstrip antennas configurations and their excitation technique.   7 M

   b) Write about the different applications of Microstrip antennas.   7 M

5. a) Explain about transmission line model analysis method in rectangular Microstrip antenna.   7 M

   b) Write about different application of rectangular Microstrip antenna.   7 M

6. a) Discuss about the different antenna properties of circular Microstrip antennas.   7 M

   b) Write about different applications of circular Microstrip antennas.   7 M

7. a) Compare slot antenna and patch antenna with respect to performance.   7 M

   b) Write about the circular polarized antenna.   7 M

8. a) Describe the following coupling methods to micro strip patches. 7 M

   i) probe coupling   ii) direct coupling

  iii) Aperture coupling

b) Explain about travelling wave series feed for Microstrip antennas with neat sketches. 7 M