Roll No. | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (ECE) (2018 Batch) (Sem.–1)

RF AND MICROWAVE CIRCUIT DESIGN

Subject Code : MTEC-PE2B-18-2

M.Code : 75178

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. a) What is Rat-race junction? [6]
   b) Define matching network. [6]
2. a) What is the basic difference between IMPATT and TRAPATT diodes? [6]
   b) State the two parameters that describe a directional coupler. Define them. [6]
3. a) Derive the properties of scattering matrix. [6]
   b) Explain the working operation of Transferred electron devices (TED). [6]
4. a) Derive the S matrix for H plane TEE junction. [8]
   b) Explain in detail noise figure in an amplifier. [4]
5. Derive an expression for cut off magnetic field for a cylindrical magnetron. [12]
6. a) Describe the losses in microwave devices. [6]
   b) Explain the working principle of Tunnel diode with performance characteristics. [6]
7. A 50 ohm lossless line connects a matched signal of 100LHz to a load of 100 ohm. The load power is 100mW. Calculate the voltage reflection coefficient and VSWR of the Load. [12]
8. Write Short notes on **(Any Two) :**
   a) Microwave BJTs [6]
   b) PIN diode [6]
   c) Broad band amplifier [6]

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.