

Code: ECMC2T1

I M.Tech - II Semester-Regular Examinations – September 2015

SOLID STATE MICROWAVE DEVICES & CIRCUITS
(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Explain the mechanism of operation of a two cavity klystron. 7 M
- b) Write a note on limitations and losses of conventional tubes 7 M
2. a) Write a note on tunneling phenomenon. 4 M
- b) Explain the VI characteristics of tunnel Diode. 6 M
- c) Explain the principle of operation of schottkey – barrier diode. 4 M
3. a) Explain the principle of TRAPATT diodes. 7 M
- b) Obtain the expression for power output and efficiency of IMPATT diodes. 7 M

4. a) Explain the RWH theory of Negative Resistance. 7 M
- b) Write a note on physics operation and characteristics of GUNN diode. 7 M
5. a) Explain the structure of hetero junction Bipolar Transistor and its operation. 7 M
- b) Give the equivalent circuit diagram of BJT and explain the Amplification phenomenon. 7 M
6. a) Explain the structure and principle of operation of MOSFET. 7 M
- b) Obtain expression for Drain current cut off frequency of MESFET. 7 M
7. Write a detailed note on the following
- a) Biasing Networks 7 M
- b) low noise small signal Amplifier design 7 M
8. a) Write the significance of negative resistance in oscillators 7 M
- b) Write note on oscillator characterization and its measurements 7 M