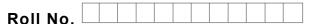
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Total No. of Pages : 02

Total No. of Questions : 09

# B.Tech (ECE) (Sem.–6) MICROWAVE AND RADAR ENGINEERING Subject Code : EC-302 M.Code : 57535

Time: 3 Hrs.

Max. Marks: 60

### INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## **SECTION-A**

### 1. Write briefly :

- a) What is the difference between Klystron & TWT?
- b) Define Gunn Effect.
- c) What are the properties of s-matrix?
- d) Define microwave band
- e) Define the term directivity and coupling factor in directional coupler.
- f) Why is an isolator used in microwave bench?
- g) What is the value of VSWR for open circuit and short circuit?
- h) What is blind speed?
- i) What is cavity resonator?
- j) Name the various scanning techniques.



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#### **SECTION-B**

- Explain the working of Tunnel diode in detail. 2.
- 3. Derive the equation for efficiency of two cavity klystron amplifier.
- 4. Explain the working of isolator with the help of neat and clean diagram.
- 5. What are slow wave structures? Give working of TWT amplifier. Give the construction and working of a TWT Amplifier.
- Explain the angle tracking system. 6.

#### **SECTION-C**

- 7. Explain the operation of radar with the help of suitable diagram and discuss all the blocks detail
- 8. a) Discuss difference between MTI and Doppler radar.
  - b) Describe high power measurement method.
- 9. Write short notes on :
  - a) CW radar and its limitations
  - b) Microwave bridges
  - c) Measurement of SWR

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.