

Roll No.

Total No. of Pages : 02

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B.Tech.(ECE) (Sem.-6)
MICROWAVE AND RADAR ENGINEERING

Subject Code : BTEC-601

M.Code : 71121

Date of Examination : 05-07-22

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. Answer briefly :

- a) What are the different types of limitations of conventional tubes on high frequency?
- b) What is the function of slow wave structure?
- c) Define tunnelling effect.
- d) What is MASER?
- e) What is the use of matched termination?
- f) How SWR can be measured?
- g) What is Doppler effect?
- h) Differentiate between CW and FMCW.
- i) What is staggered PRFs?
- j) Name the different scanning techniques used in radar.

SECTION-B

2. What is Gunn effect and two valley theory of electrons?
3. Explain the working of isolator in detail.
4. Explain working and construction of reflex klystron tube with the help of a diagram.
5. Draw the block diagram of radar and derive radar equation.
6. Explain range tracking system in detail.

SECTION - C

7. Write note on:
 - a) Varactor diode
 - b) BWO
 - c) MTI radar
 - d) Doppler tracking systems
8. Define the following terms in case of magnetron (with diagram):
 - a) Favoured and unfavored electrons
 - b) Effect of electric and magnetic field
 - c) Cut off field
 - d) π -mode oscillations
9.
 - a) Explain angle tracking system in detail.
 - b) What are the different applications of radar?

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.