Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE) (2012 to 2017) (Sem.–6)

MICROWAVE AND RADAR ENGINEERING

Subject Code : BTEC-601

M.Code : 71121

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 is crossed field amplifier?

b) What is velocity modulation?

c) What is IMPATT?

d) What is the need of bends in microwave?

e) What is SWR and its value at matched load?

f) Differentiate between TED and microwave diodes.

g) Draw the general set up of microwave measurement.

h) Why reflex klystron is used in laboratories?

i) What is phase shifter?

j) Define microwave band.

SECTION-B

2. How wavelength can be measured using microwave set up?

3. Explain working of Tunnel diode.

4. How Microwave Bridge works?

5. Explain the double minimum method for measurement of SWR.

6. A two cavity klystron amplifier has following characteristics

   Voltage gain = 15 dB

   Input power = 5 mW

   R_{Sh} of input cavity = 30 kΩ

   R_{sh} of output cavity = 40 kΩ

   R_L = 40 kΩ

   Find : a) The input rms voltage b) output rms voltage

SECTION-C

7. Compare 2-cavity klystron and reflex klystron *w.r.t* their working and construction.

8. Explain working of E-plane Tee and H-plane Tee (with neat and clean diagram). Also solve s-matrix for the same.

9. Write note on :

   a) CW Radar

   b) MTI 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.