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

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ETE)/(ECE) (2011 Onwards) (Sem.–6)

MICROWAVE & RADAR ENGINEERING

Subject Code : BTEC-601

Paper ID : [A2315]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION 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 has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

1. **Write briefly :**

a) Name different high frequency limitations of conventional tube.

b) Write the full forms of IMPATT and TRAPATT diodes.

c) Draw V-I characteristic of TUNNEL diode.

d) Define frequency pushing and pulling in magnetron.

e) What are π mode oscillations in magnetron?

f) What is VSWR?

g) Explain Doppler Effect.

h) Define Blind speed.

i) What do you mean by staggered PRF?

j) What are the limitations of CW radar?

SECTION-B

2 Describe the working of MTI radar with the help of suitable sketch.

3. Explain the diagram for two cavity klystron amplifier.

4 Describe transfer electron effect using the energy level diagram for GUNN diode.

5 Differentiate E-Plane Tee and H-Plane Tee.

6 What is Impedance matching? Explain single stub matching and double stub matching.

SECTION-C

7 a) Explain the power ratio method for attenuation measurement.

b) Obtain the equation for maximum RADAR range.

8 Write short notes on :

a) Scanning and tracking techniques.

b) What are the applications of RADAR?

9 a) Explain working of isolator and circulator with sketches.

b) Describe the operation of two hole directional coupler.