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

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech (Electrical & Electronics Engineering) (Sem.–6)

MICROWAVE AND RADAR ENGINEERING

Subject Code : BTEEE-603B

M.Code : 72843

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) Draw the block diagram of microwave measurement.

b) What is the function of gyrator?

c) What are the properties of S-matrix?

d) What is the need of angle tracking system?

e) What is Doppler effect?

f) What is matched termination?

g) Define crossed field amplifier.

h) Name the limitations of conventional solid state devices at microwave.

i) What is function of drift space in 2-cavity klystron?

j) What is Gunn effect?

SECTION-B

2) Explain working of reflex klystron with the help of neat and clean diagram.

3) Explain TRAPATT in detail.

4) How attenuator works?

5) Explain the principle and working of MTI radar.

6) A marine radar operating at 10 GHz has maximum range of 50 km with an antenna gain of 4000. If the transmitter has a power of 250 kW and minimum detectable signal of 10^{-11} W. Determine the cross section of the target the radar can sight.

SECTION-C

7) a) Explain radar range equation in detail.

   b) Explain construction and working of directional coupler with the help of neat and clean diagram.

8) Explain the working of magnetron in detail.

9) Write note on :

   a) Scanning techniques used in radar

   b) Blind speed and staggered PRFs

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.