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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electronics &amp; Electrical) (2011 Onwards) (Sem.-6)

**MICROWAVE AND RADAR ENGINEERING**

Subject Code : BTEEE-603B

M.Code : 71138

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****Q1. Write briefly :**

- a) Write a short note on Doppler Effect.
- b) State limitations of conventional solid state devices at MW.
- c) Write short note on gyrator.
- d) Applications of isolator based on Faraday rotation.
- e) Write short note on SWR.
- f) Explain collapsing loss.
- g) What is meant by beam splitting.
- h) Why conical scan tracker more likely to be preferred over sequential lobing tracker?
- i) Write short note on delay line cancellers.
- j) Explain two applications of RADAR.



**SECTION-B**

Q2. Define the following terms related to RADAR :

- a) Range to a RADAR
- b) Maximum unambiguous range

Q3. With block diagram, explain the operation of moving- target indicator (MTI) RADAR.

Q4. What is blind speed? How can we eradicate it.

Q5. Explain the application of PIN diode as single switch and as phase shifter.

Q6. Explain construction and working of precision rotary type phase shifter, with neat diagram.

**SECTION-C**

Q7. Explain the following with respect to RADAR:

- a) Clutter attenuation
- b) Improvement factor
- c) Doppler shift

Q8. With neat diagram, explain the construction operation of IMPATT diode and mechanism of oscillations.

Q9. a) Discuss behaviour of ferrites in isolators and circulators.

- b) Describe construction and working of magnetron.

**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.**