

B.TECH
(SEM VIII) THEORY EXAMINATION 2018-19
Microwave and Radar

Time: 3 Hours**Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief.** **2 x 10 = 20**
- a) Explain VSWR meter.
 - b) What do you understand by radar clutter?
 - c) Write the application of MT radar
 - d) Distinguish between bends and twists.
 - e) What are phase shifters?
 - f) What are the properties of waveguides ?
 - g) List the applications of radar.
 - h) Compare striplines and microstriplines.
 - i) Write a short note on isolators.
 - j) Give the principle of varactor diode.

SECTION B

- 2. Attempt any three of the following:** **10 x 3 = 30**
- a) Describe the operation of duplexer radar antenna .
 - b) Describe the measurement technique for frequency and wavelength.
 - c) Write the s- matrix for E-plane Tee.
 - d) Name the various types of radars. Derive the radar range equation.
 - e) Explain the term: PIN diode, IMPATT diode

SECTION C

- 3. Attempt any one part of the following:** **10 x 1 = 10**
- a) Explain the working of a four port circulator.
 - b) Write a shot note on Hybrid Tee and explain its applications.
- 4. Attempt any one part of the following:** **10 x 1 = 10**
- a) Explain the following terms: microwave attenuator, coaxial connectors
 - b) With the aid of neat sketch explain the operation of a two pole wave guide directional coupler.
- 5. Attempt any one part of the following:** **10 x 1 = 10**
- a) State the properties of s-parameters. Prove the unitary property of S parameter.
 - b) Write the limitations of conventional active devices.
- 6. Attempt any one part of the following:** **10 x 1 = 10**
- a) Explain the following terms: BWO, TWT
 - b) Describe the operation of GUNN diode .Also explain its characterstics and applications.
- 7. Attempt any one part of the following:** **10 x 1 = 10**
- a) Describe the operation of Reflex klystron.Also explain its characterstics and applications.
 - b) Describe the functional block diagram of pulse radar and discuss the function of each block.