

B.TECH.**THEORY EXAMINATION (SEM-VIII) 2016-17****MICROWAVE & RADAR****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A****1. Explain the following:****10 x 2 = 20**

- (a) Define directional coupler.
- (b) What is quality factor in microwave resonator?
- (c) Define VSWR in microwave .
- (d) Define impedance attenuator.
- (e) Define term slotted lines.
- (f) What is Hybrid ring in microwave?
- (g) What are the name of microwave semiconductor diode?
- (h) What is mean by radar?
- (i) What is radar clutter?
- (j) What is noise figure in radar?

SECTION – B**2. Attempt any five parts of the following questions:****5 x 10 = 50**

- (a) Explain the construction and working of Directional Coupler
- (b) Derive the radar range equation.
- (c) Explain limitation of conventional active devices at microwave frequency.
- (d) Derive the solution of wave equation in rectangular co ordinates for TE degenerate mode.
- (e) Explain the gunn diode in detail
- (f) Explain the varactor diode in detail.
- (g) Explain the moving target radar with its application.
- (h) What are Avalanche transient time devices?

SECTION – C**Attempt any two parts of the following questions:****2 x 15 = 30****3 Explain the Impatt and Trapatt diode in detail.****4 Write the short note of following**

- (i) TWT
- (ii) Klystron

5 Explain the E-plane, H plane tree in microwave component.