Sessional-II

Microwave & Radar Engineering (6th sem section-1& 2)

Max Marks:30

Q1. (a)What is velocity modulation? Explain how velocity modulation is utilized in klystron amplifier. (5)

(b) By mean of an Applegate diagram explain the operation of a reflex Klystron. Show that the theoretical efficiency of reflex klystron is 22.78%. (5)

Q2. (a)An IMPATT diode power amplifier has a negative resistance of 25 Ohm and a load resistance of 50Ohm. Determine the power gain. (5)

(b) Write a note on TRAPATT diode . (5)

Q3. (a) A travelling-wave tube (TWT) operates under the following parameters; beam voltage 3 kV, beam current 30 mA, characteristics impedance of helix 10 Ω, circuit length 50 and frequency is 10 GHz. Determine the output power gain and all propagation constants. (5)

(b) Explain Gunn Effect using the two valley theory. (5)