

UNIT - II

- 2 (a) Sketch and explain the circuit of Schemitt trigger using a bi-polar function transistor. 8
- (b) Give the two Barkhausen conditions required in order for sinusoidal oscillations to be sustained. Also draw neat diagrams. 8

OR

- 2 (a) Sketch the circuit for a Wein bridge Oscillator. What determines the frequency of Oscillation ? Will Oscillations take place if the bridge is balanced ? 8
- (b) Sketch the topology for a generalized resonant - circuit Oscillator, using impedance Z_1, Z_2, Z_3 . At what frequency will the circuit Oscillate ? 8

UNIT - III

- 3 (a) Draw the small signal high frequency CE model of a transistor. Explain the same. 8
- (b) What is the physical origin of the two capacitors in the hybrid - model ? What is the order of magnitude of each capacitance ? 8

OR

- 3 (a) Derive the expression for the CE short circuit current gain A_i as a function of frequency. 8
- (b) Define f_b, f_T . What is the relationship between f_b and f_T . 8



UNIT - IV

- 4 Write short note on any two :
- (a) Band Pass Amplifier
 - (b) Double Tuned Transformer Coupled Amplifier
 - (c) Stagger Tuned Amplifier
 - (d) Parallel resonant circuits.

8+8

UNIT - V

- 5 (a) Explain quasi complementary symmetry amplifiers. 8
- (b) Draw the diagram of a transformer coupled single - transistor output stage, and explain the need for impedance matching. 8

OR

- 5 (a) Explain why even harmonics are not present in a push-pull amplifier. Give two additional advantages of this circuit over that of a single transistor amplifier. 8
- (b) Show that the maximum conversion efficiency of the idealized class B push pull circuit is 78.5%. 8

