

B. Tech Degree III Semester Examination, November 2007**EB/EE/CS 306 ELECTRONIC DEVICES AND CIRCUITS**

(2006 Admissions)

Time : 3 Hours

Maximum Marks : 100

PART A(Answer ALL questions)

(8 x 5 = 40)

- I. (a) Distinguish between regulated and ordinary DC power supply.
 (b) Describe the construction and working of PIN diodes.
 (c) What is meant by stabilization of operating point?
 (d) Explain the term :
 (i) Lower cut off frequency (ii) Upper cut off frequency
 (iii) Band width
 (e) What are the classifications of power amplifiers?
 (f) Which are the two Barkhausen criteria required in order to sustained sinusoidal oscillation?
 (g) Draw a clipping circuit which clip a sign wave with 9 Vpp at +2V –3V at positive and negative half cycles respectively. Explain the working.
 (h) What is a pulse shaping circuit explain with an example?

PART B

- I. (a) Explain working of a half wave rectifier and also derive the equation for efficiency. (10)
 (b) Define voltage regulation in DC power supply, why it is expressed in percentage? (5)
- OR**
- II. (a) Explain the construction and working of an UJT with the help of a neat diagram, draw its characteristics. (8)
 (b) Explain the working of transistor series regulator with neat sketch. (7)
- III. (a) Sketch typical transistor common base configuration and its characteristics and derive current amplification factor. (10)
 (b) Compare the three transistor configurations. (5)
- OR**
- IV. (a) List out the different biasing techniques of BJT and compare. (5)
 (b) Explain the voltage divider bias in detail. (10)
- V. (a) Sketch the circuit of a transformer coupled class A amplifier and explain the operation of circuits. (10)
 (b) Explain positive and negative feedback. (5)
- OR**
- VI. (a) Sketch the circuit of a complementary emitter follower amplifier and its operation, and application. (10)
 (b) List out the various types of oscillators. (5)
- VII. (a) Explain the operation of astable Multivibrator and explain its operation. (10)
 (b) Differentiate astable, bistable and monostable Multivibrator. (5)
- OR**
- VIII. (a) Draw and explain
 (i) clipping
 (ii) clamping circuits and give its practical applications (10)
 (b) List two applications of clipping and clamping circuit. (5)

