

## B. Tech Degree III Semester Examination, November 2009

### CS/EB/EE 306 ELECTRONIC DEVICES AND CIRCUITS

(2006 Scheme)

Time : 3 Hours

Maximum Marks : 100

#### PART A

(Answer ALL questions)

(8 x 5 = 40)

- I. (a) Explain ' $\pi$ ' filter. What is the use of bleeder resistor in LC filter?  
(b) Explain working of UJT.  
(c) Differentiate between BJT and FET and compare CB,CC,CE configuration.  
(d) Explain voltage divider biasing and stability of operating point.  
(e) Explain Bark Hausen criteria with an example of oscillator.  
(f) How harmonic distortion avoided in Class B Power amplifier? Explain Heat sink.  
(g) Explain integrator and Differentiator.  
(h) Explain pulse characteristics.

#### PART B

- II. (a) Explain series voltage regulator. (8)  
(b) Explain dual DC power supplies. (7)
- OR
- III. Explain bridge full wave rectifier and derive expression for ripple factor, efficiency and RMS voltage. Design a filter with ripple 0.5. (15)
- IV. (a) Explain high frequency equivalent model of RC coupled amplifier. Derive gain, input and out put impedance. (10)  
(b) Explain fixed biasing method. (5)
- OR
- V. (a) Derive expression  $\alpha$ ,  $\beta$  and  $\gamma$ . (5)  
(b) Explain characteristics of FET amplifier. (5)  
(c) Explain 3-dB bandwidth and lower cut off frequency and upper cut off frequency. (5)
- VI. (a) Explain double tuned amplifier. (5)  
(b) Explain class AB push pull amplifier. (10)
- OR
- VII. (a) Explain Weinbridge oscillator. (10)  
(b) Explain power calculation of Class A,B power amplifier. (5)
- VIII. Explain the difference between astable and monostable multivibrator with suitable circuit and wave forms. (15)
- OR
- IX. (a) Explain Bootstrap Sweep Circuit. (9)  
(b) Explain Miller Sweep Circuit. (6)

\*\*\*

