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SE Electrical III CBGS
EDC

25·11·2016

QP Code : 541901

(3 Hours) **[Total Marks :80**

N.B. : (1) Question Number **One** is compulsory
(2) Attempt **Any Three** of Remaining **Five** Questions
(3) **Figure** to right indicate **full** Marks
(4) Assume the suitable data if it is necessary

1. Answer **any four** from the following : **20**
   (a) Explain the V-I characteristics and applications of Zener diode.
   (b) Explain the construction and principle of operation of Schottky diode with one application.
   (c) Draw and explain voltage divider biasing circuit.
   (d) Compare CC and CE Amplifier.
   (e) Explain Barkhausen criterion for sustained oscillations.
   (f) Draw and explain dual input balanced output differential amplifier using BJT.

2. (a) What are the advantages of negative feedback? Explain. **10**
   (b) Explain full wave rectifier with neat diagram and waveforms. Also explain RC filter. **10**

3. (a) Derive the expression for voltage gain, current gain,input impedance, output impedance of CE amplifier. **10**
   (b) Explain the construction and working of N-channel JFET. **10**

4. (a) Derive an expression for the voltage gain of CS differential amplifier. **10**
   (b) What type of feedback is used in oscillators? Explain Wien bridge Oscillator with neat diagram. **10**

5. (a) Draw and explain the different types of feedback amplifiers. **10**
   (b) Draw circuit for R-C phase shift oscillator. Derive an expression for its frequency of oscillation. **10**

6. Write short notes on any Three of the following. **20**
   (i) Darlington pair
   (ii) UJT Relaxation oscillator
   (iii) Frequency response of BJT amplifier.
   (iv) Thermal stabilization and compensation
