

**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION  
DECEMBER 2010**

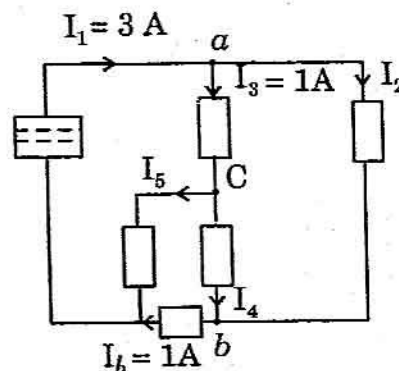
CE 04 306—ELECTRICAL AND ELECTRONICS ENGINEERING

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

- I. (a) (i) Write down the current relationship for Junctions, a, b, c of the network shown in Figure below. Determine the currents  $I_2$ ,  $I_4$  and  $I_5$ .



- (ii) Compare series, parallel RLC circuits.
- (b) (i) Why transformers are rated in kVA instead of kW.
- (ii) A 4-pole 3-phase Induction motor runs at 1440 r.p.m on a 50 Hz supply. Find the slip speed and slip.
- (c) Write notes on different system of wiring.
- (d) Explain basics of earthing.
- (e) (i) Compare PN diode with Zener diode.
- (ii) Explain the operation of NPN transistor.
- (f) What is voltage regulation ? Explain any *one* voltage regulator circuit.
- (g) Draw the internal block diagram of CRO. List the advantages and application.
- (h) Compare LED, LCD and Opto couples.

(8 × 5 = 40 marks)

- II. (a) Explain the construction detail, principles of operation of transformer. Write voltage and current relations and various losses.

*Or*

- (b) Explain the constructional details of single phase Induction motor with starting methods.

(15 marks)

**Turn over**

- III. (a) (i) Explain "wiring of simple lamp controlled by a switch".  
(ii) Tube light wiring.

Or

- (b) Explain Indian Electricity rules.

(15 marks)

- IV. (a) Explain the characteristics of a transistor in a CE configuration and compare CE, CC, CB configuration.

Or

- (b) Draw and explain the working of any *two* voltage regulators.

(15 marks)

- V. (a) Explain in detail the measurement of displacement, flow.

Or

- (b) Write notes on :

- (i) LVDT type recorder.  
(ii) Magnetic tape recorder.

(15 marks)

(4 × 15 = 60 marks)