C 57535

Name...

Reg. No...

COMBINED FIRST AND SECOND SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION, JUNE 2009

CS 04 109—BASIC ELECTRICAL ENGINEERING
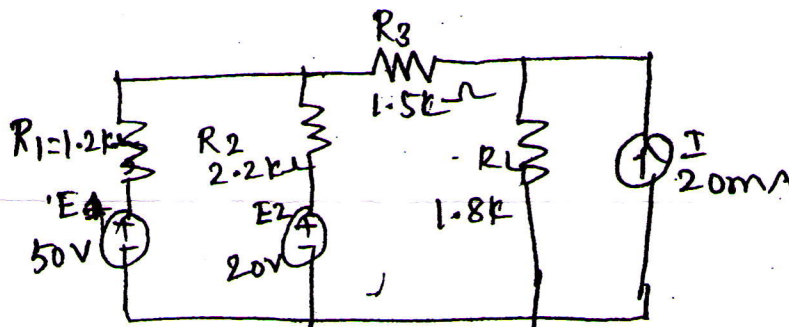
(2004 admissions)

[CS, IT, PT]

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

I. (a) State Norton's theorem.

   (b) Using Nodal analysis, determine the current that flows through resistor R_3 in the circuit.

   (c) A series RLC circuit is connected to a 100 V, 50 Hz supply. When it is varied, the maximum current obtained is 0.2 amperes and the voltage across the capacitor is 165 volts. Find the circuit constants.

   (d) Explain about transformed networks with example.

   (e) (i) Define Electric circuits and Magnetic circuits.

       (ii) Write the characteristics of an ideal transformer.

   (f) Explain about voltage regulation.

   (g) Draw the equivalent circuits of Ring motors. Write their applications.

   (h) How frequency and phase can be measured ?

                                                              (8 × 5 = 40 marks)

II. (a) (i) Compare the characteristics of series and parallel circuits.   (7 marks)

        (ii) Explain star-delta conversion with example.   (8 marks)

Or

Turn over

  (b) (i) Explain transient response of RLC circuits with example.   (7 marks)

    (ii) State and explain super position theorem.   (8 marks)

III. (a) (i) Compare AC single phase circuit and three phase circuit.   (7 marks)

    (ii) Explain the measurement of three phase power using two watt meter methods.

                           (8 marks)

Or

  (b) (i) Explain the characteristics and application of Laplace transform.   (7 marks)

    (ii) Explain Resonance in series and parallel 'RLC' circuits.   (8 marks)

IV. (a) (i) Explain energy stored in magnetic field.   (7 marks)

    (ii) Explain the construction and characteristics of an ideal transformer.   (8 marks)

Or

  (b) (i) Explain the characteristics and working of DC generators.   (7 marks)

    (ii) Explain the principle of operation of compound motors. Write their application.

                           (8 marks)

V. (a) (i) Differentiate Single-Phase and Three Phase Induction motors.   (7 marks)

    (ii) Explain the construction and working of an Moving Coil, Moving Iron Voltmeter.

                           (8 marks)

Or

  (b) (i) Explain the methods of starting a synchronous motor with neat sketches.   (7 marks)

    (ii) Explain the constructional features, principle of operation of synchronous machine.

                           (8 marks)

                        [4 × 15 = 60 marks]