C 57555 (Pages : 2)

Name...

Reg. No.....................................

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

CS/IT/PT 2K 109—BASIC ELECTRICAL ENGINEERING

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) Write the international systems of units for force, energy and current.

(b) Write superposition theorem and give one example.

(c) Write the concept of poles and zeros.

(d) Derive the characteristic equation of a mechanical mass damper second order system.

(e) Write about regulation in detail.

(f) Write the principle of moving iron instrument.

(g) Explain the speed control of D.C. motor.

(h) Write the basic principle of induction motor.

(8 × 5 = 40 marks)

II. (a) Draw the Norton's equivalent at terminals PQ for the circuit of Fig. 1. Hence find the power consumed in a 1 ohm resistor connected between P and Q.

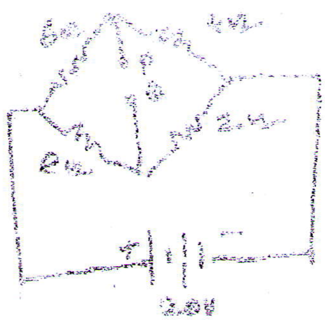

Fig. 1

Or

(b) Obtain the Thevenin's equivalent circuit at the terminals PQ in the network of Fig. 2.

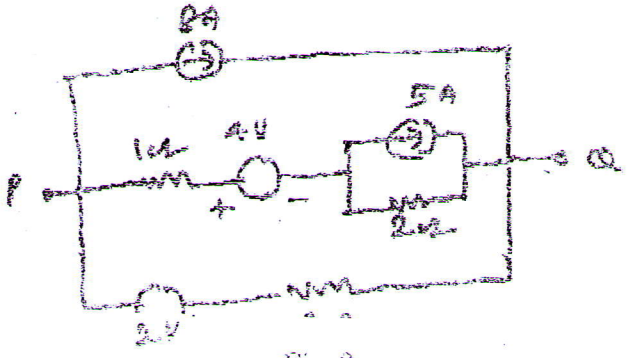

Fig. 2

(15 marks)

III. (a) Discuss the analysis of A.C. circuits.

Or

(b) Give example for first and second order systems and explain.

(15 marks)

IV. (a) (i) Explain the operation of wattmeter. (7 marks)

(ii) Write the principle of electromagnetism. (8 marks)

Or

(b) (i) Explain the concept of moving coil instrument. (7 marks)

(ii) Briefly explain the operation of a transformer. (8 marks)

V. (a) Discuss the basic principle and operation of synchronous motor.

Or

(b) Explain the concept of alternating current machines.

(15 marks)

[4 × 15 = 60 marks]