JYOTHI ENGG. COLLEGE LIBRARY
THRISSUR EDUCATIONAL TRUST

D 51223 **(Pages : 2)** **Name**.....

Reg. No.....

COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2008

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

Time : Three Hours **Maximum : 100 Marks**

Answer **all** *questions.*

I. (a) Write Kirchhoff's current and voltage laws.

(b) Give the units of force, energy and flux density.

(c) Explain the term series resonance.

(d) Write short notes on forced response.

(e) Write the principle of energy meter.

(f) What is meant by regulation ? Explain.

(g) Write the concept of d.c. motor.

(h) Draw the circuit model of an alternator and explain.

(8 × 5 = 40 marks)

II. (a) Find the current in the 2-ohm resistor of Fig. 1 by the principle of superposition.

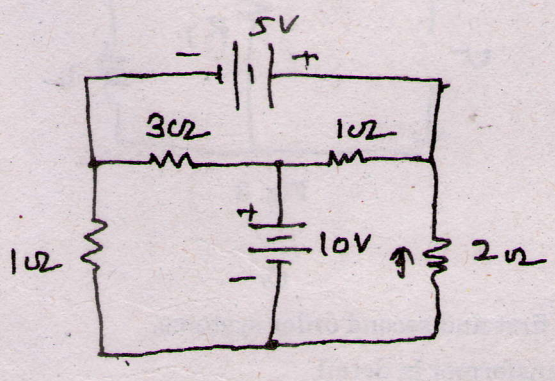

Fig. 1

(15 marks)

Or

Turn over

(b) Find the Thevenin's and Notron's equivalent circuit at terminals a–b for the network of Fig. 2

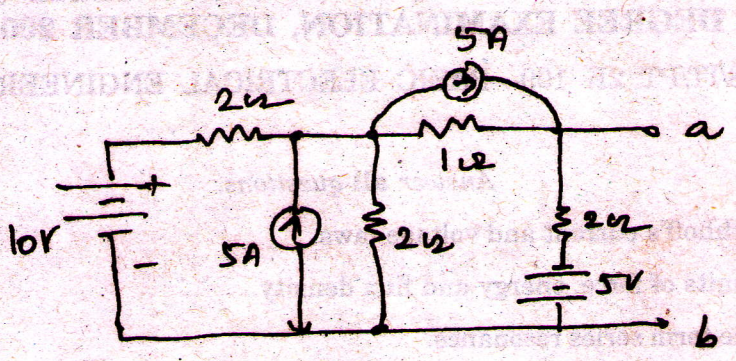

Fig. 2

(15 marks)

III. (a) In the circuit, given in Fig. 3 $R_1 = 2\ \Omega$, $R_2 = 6\ \Omega$ and $L = 3$ H.

(i) Find the enough points to plot $Z(s)$.

(ii) What is the impedance of this circuit to direct current ?

(iii) If a voltage $v = V_0 e^{st}$ is acting where $V_0 = 1$V, what current i flows for $s = -4$?

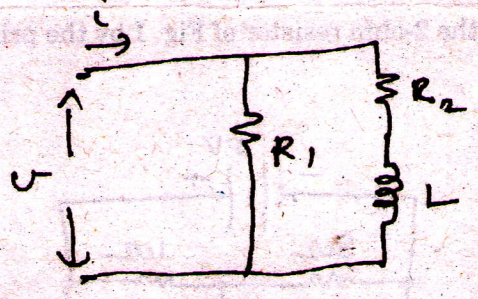

Fig. 3

(15 marks)

Or

(b) Give examples for first and second order systems. (15 marks)

IV. (a) (i) Discuss the transformer in detail. (7 marks)

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

Or

(b) Discuss the principle of moving iron instruments. (15 marks)

V. (a) Explain the principle of D.C. generator. (15 marks)

Or

(b) Explain the basic principle of operation of induction motor. (15 marks)

[4 × 15 = 60 marks]