C 5814

(Pages : 2)

COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, JUNE 2010
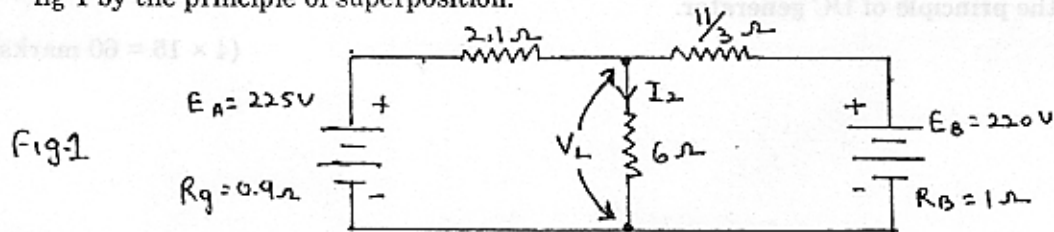
CS/IT/PT 2K 109—BASIC ELECTRICAL ENGINEERING

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

1. (a) Give the units for force, energy and change.

   (b) Find (i) the current I_L ; (ii) the load voltage V_L; and (iii) the load power P_L in the circuit of fig 1 by the principle of superposition.

Fig.1

   (c) Explain the terms poles and zeros.
   (d) Give example for first order system.
   (e) Explain the operation of transformer.
   (f) Write the function of wattmeter.
   (g) Write the concept of alternator.
   (h) Write the basic principle of operation of synchronous motor.
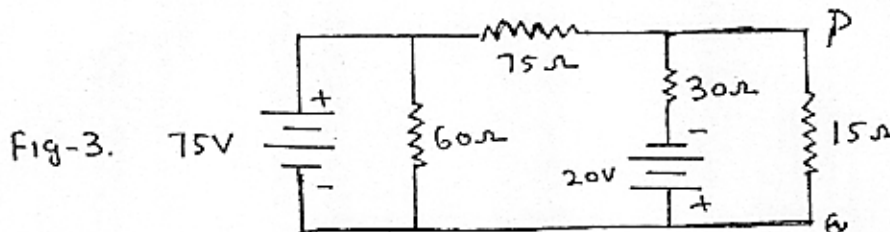
   (8 × 5 = 40 marks)

2. (a) For the circuit shown in Fig. 2 determine, (i) the open circuit e.m.f. at the load terminals PQ :

   (i) The Thevenin's resistance at PQ ;

   (ii) The load current ; and

   (iii) Load power.

Fig-2
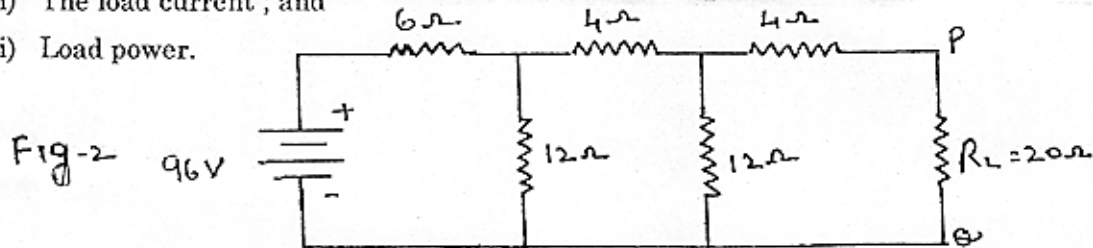
Or
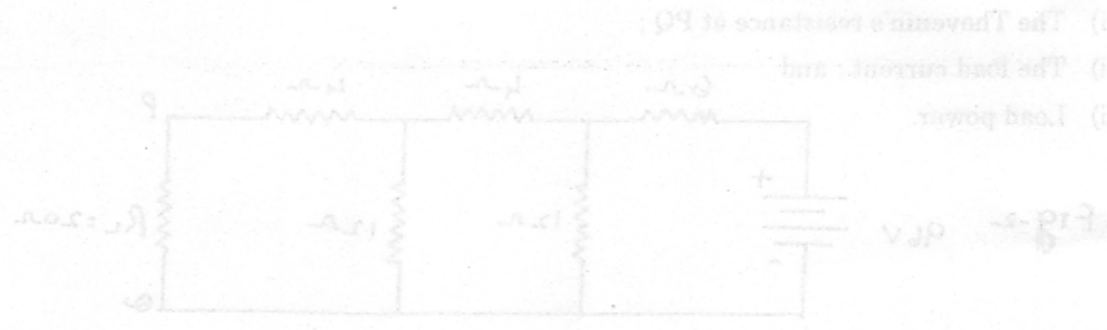
   (b) Find the voltage across the 15 Ω resistor using Norton's theorem in the circuit of Fig. 3.

Fig-3.

Turn over

3. (a) Write the concept of natural and forced responses.

Or

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

4. (a) Discuss the principle of electromagnetics.

Or

(b) Explain the principle of moving coil instrument.

5. (a) Explain the principle of operation of induction motor.

Or

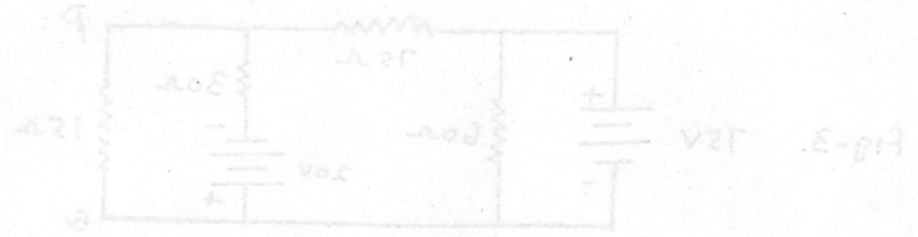(b) Explain the principle of DC generator.

(4 × 15 = 60 marks)