

Roll No.

--	--	--	--	--	--	--	--	--	--

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

COMPUTER SCIENCE AND ENGINEERING
IV Semester

EE8407 & ELECTRICAL ENGINEERING AND CONTROL SYSTEMS

(Regulation 2012)

Time: 3 Hours

Answer ALL Questions

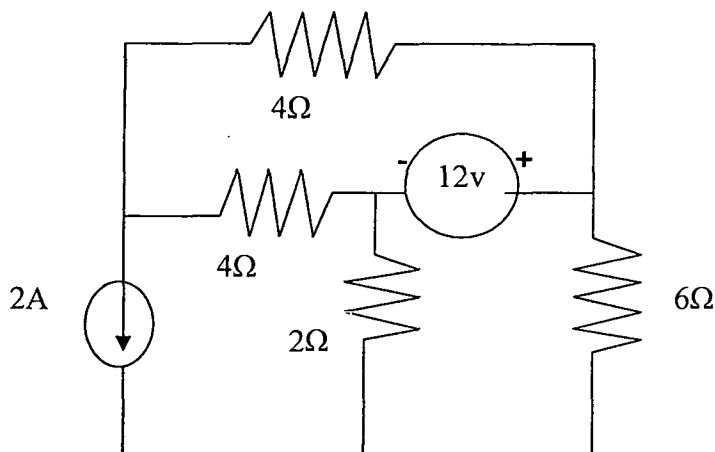
Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Define Dependent and independent sources and its representation neatly.
2. Define the phasor representation of a RL series circuit.
3. Define the operating principle of a DC motor.
4. Write down the applications of Series motor and compound motor.
5. Draw the slip ring induction motor neatly.
6. Derive the impedance relationship for transformer referred to primary side.
7. Derive the mathematical model of liquid level system.
8. Draw the block diagram of dc position control closed loop feedback system.
9. Represent the general second order system and its coefficient associated.
10. What is the necessity for state diagram representation in control systems?

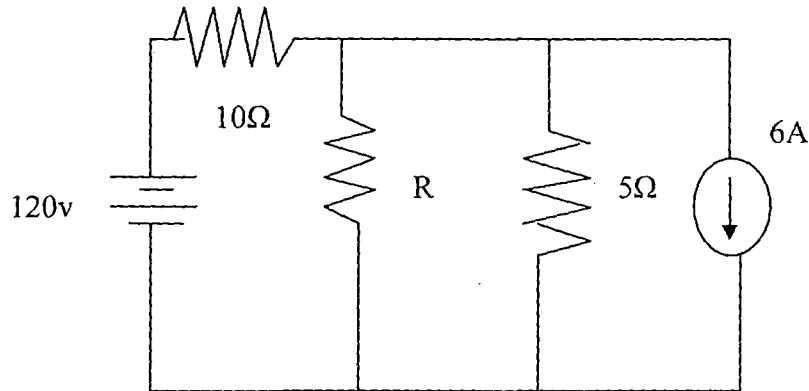
Part – B (5 x 16 = 80 marks)

11. Explain the types of DC generators by its construction and plot its Internal and external characteristics. (16)
12. a) Find the current flowing through the 6Ω resistor as shown in the figure using thevenin's theorem. (16)



(OR)

- b) Calculate the value of R which will absorb maximum power from the circuit of the figure shown below and also compute the value of maximum power (16)

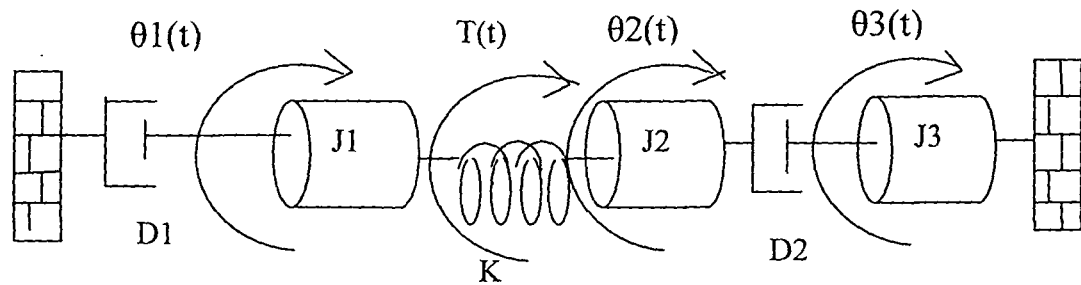


13. a) Explain the construction and working principle of three phase induction motor briefly. (16)

(OR)

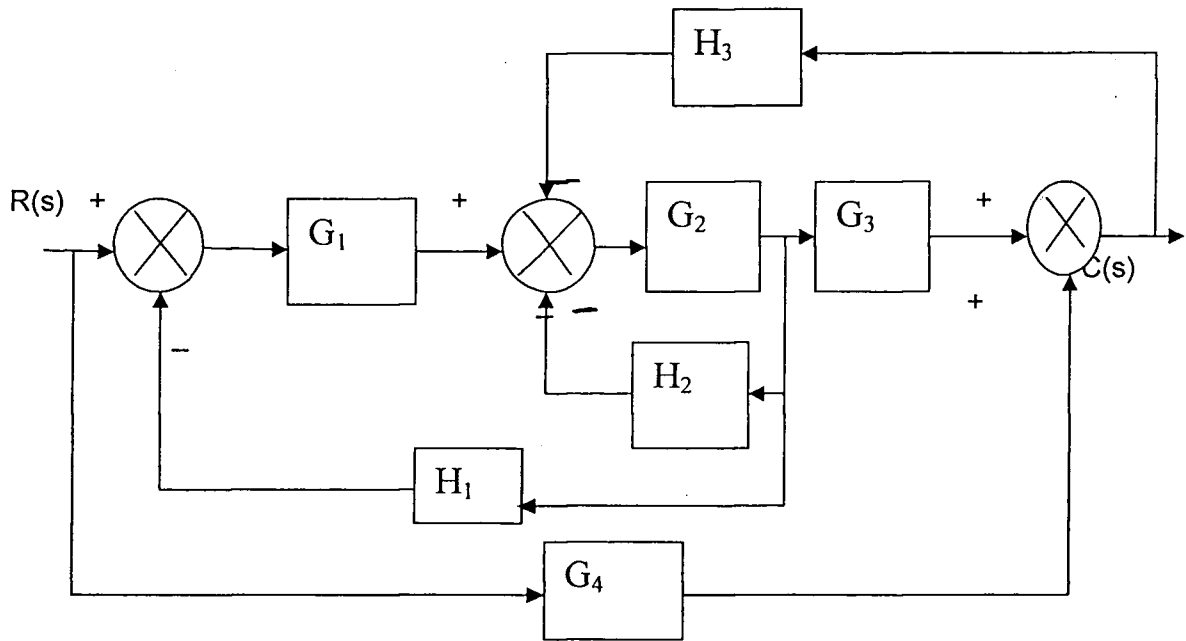
- b) Explain double field revolving theory of single phase induction motor and any two starting methods of single phase induction motor. (16)

14. a) Derive the differential equations for the given mechanical rotational system and find the Transfer function using the equations of motions. (16)



(OR)

- b) For the block diagram shown determine the overall transfer function $C(S)/R(S)$ either using Block diagram or using Mason gains formula (16)



15. a) Derive a relationship for time response analysis of general second order system and plot its characteristics.

(OR)

b) Sketch the asymptotic gain and the phase shift curves for the following transfer function $G(s) = 20s/[(s+1)(s+10)]$