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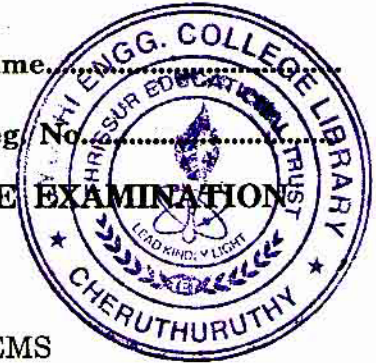
Name.....

Reg No.....

**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2012**

Computer Science Engineering

CS 04 306—ELECTRIC CIRCUITS AND SYSTEMS



Time : Three Hours

Maximum : 100 Marks

Answer all questions.

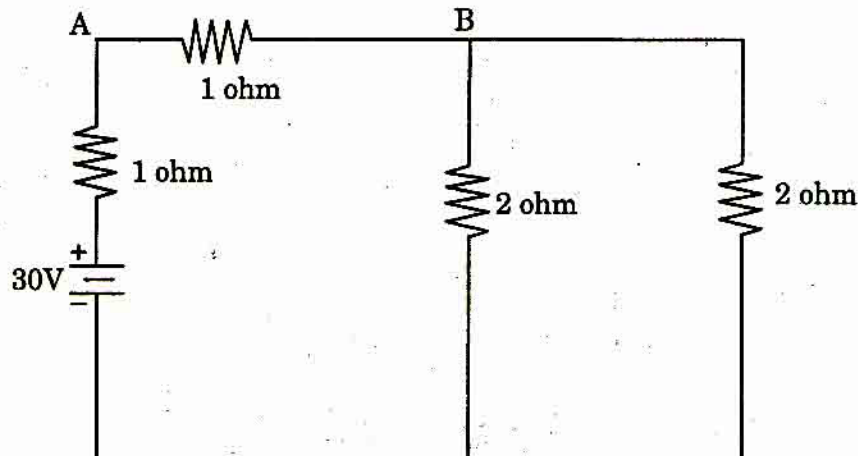
Part A

1. (a) Discuss about transfer admittance.
- (b) Explain the dot rule for coupled circuits.
- (c) Write short notes about properties of incidence matrix.
- (d) Explain the theme of Maximum power transfer theorem.
- (e) Explain about single phase circuits.
- (f) Discuss about three phase systems.
- (g) Explain the principles of Maxwells bridge.
- (h) Discuss about feedback control systems.

(8 × 5 = 40 marks)

Part B

2. (a) Find the cut-set and tie-set matrix of the given network shown.

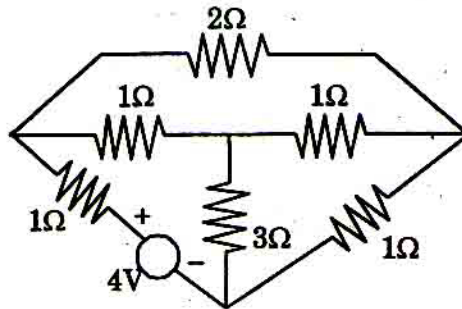


(15 marks)

Or

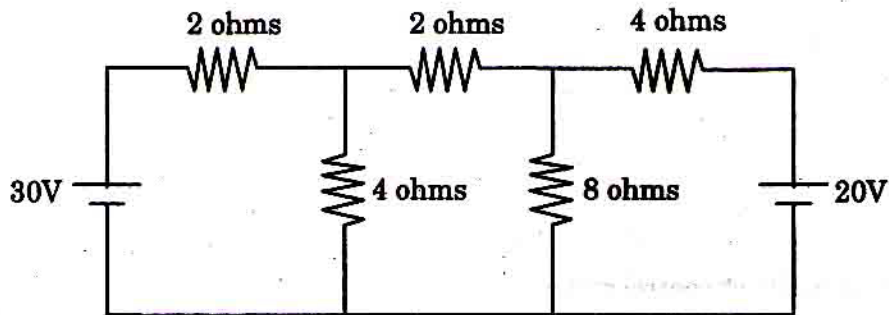
Turn over

- (b) For the network given below, obtain the tie-set matrix and hence write the equilibrium equations. Also give the expression for the branch currents in terms of link currents.



(15 marks)

3. (a) Verify Maximum power transfer theorem for the given network.



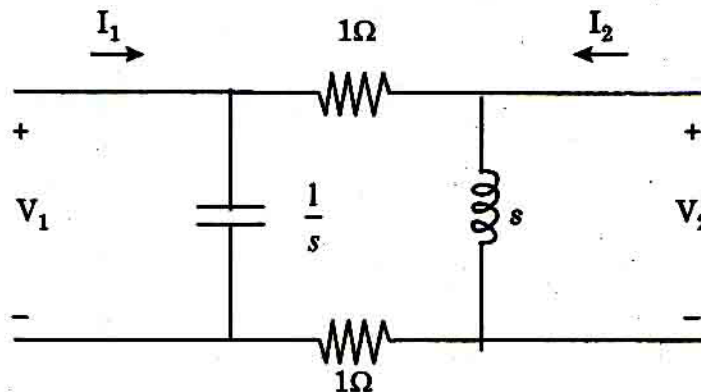
Or

(15 marks)

- (b) Explain the concepts of impedance and admittance in detail with own illustrations.

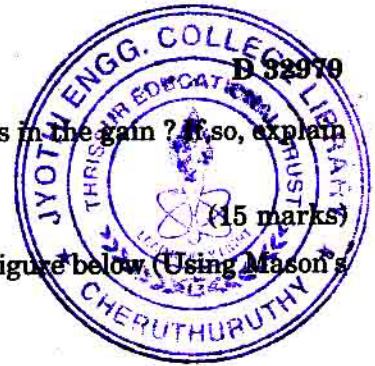
(15 marks)

4. (a) Find the Y parameters for the network and from the Y parameters, find the z parameters.

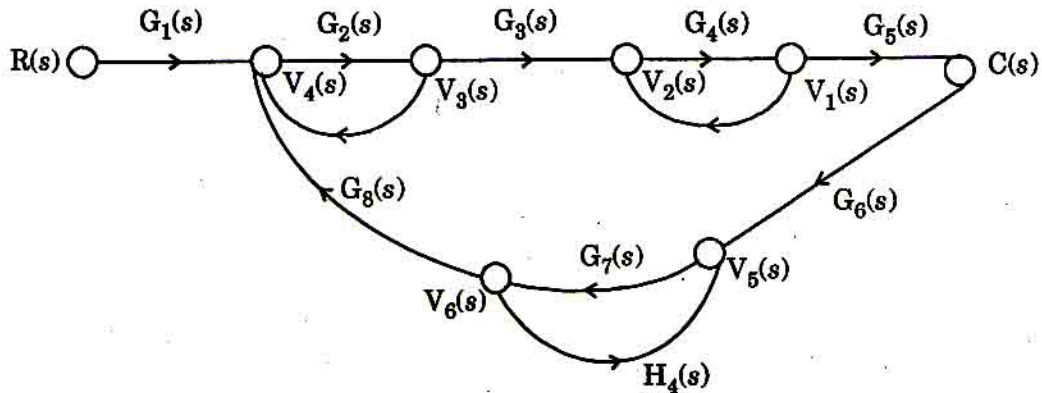


Or

(15 marks)



- (b) Whether Wien bridge oscillator circuit is very sensitive to changes in the gain? If so, explain the fact in detail with an example. (15 marks)
5. (a) Find the transfer function $C(s)/R(s)$, for the signal flow graph in Figure below. (Using Mason's rule)



(15 marks)

Or

- (b) Obtain the bode plot of the system given by transfer function $G(s) = 4 / (s^2 + 2s + 4)$.

(15 marks)

[4 × 15 = 60 marks]