Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B. Tech. /M. Tech. /Ph. D.

Branch	: ECE / EEE	**Semester**	: 3rd
Title of the Course	: Network analysis and synthesis	**Course Code**	: EEL 201

Time: 2 Hours **Maximum Marks: 25**

Note : All questions are compulsory.

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1. (a) Determine a numerical value for each current and voltage (i1, v1, etc.) in the circuit of Fig. 1 4+2

(b) Calculate the power absorbed by each element and verify that they sum to zero.

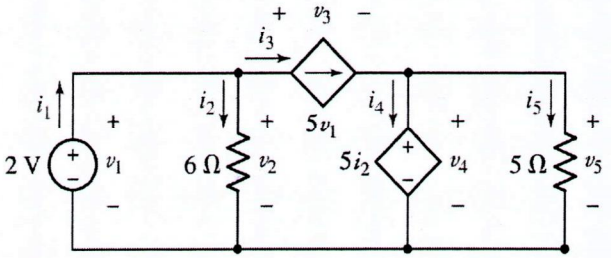


Fig. 1

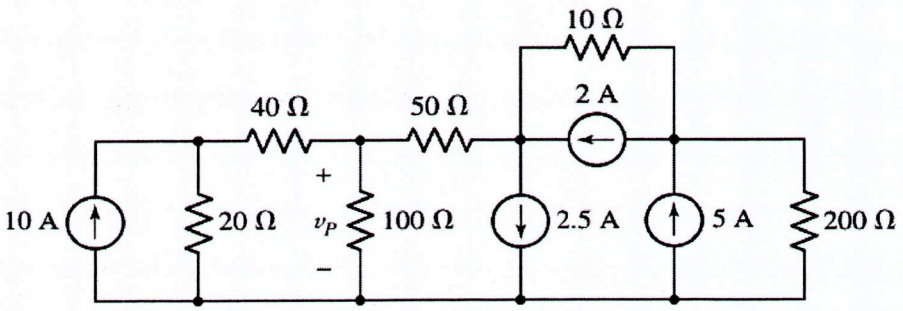
2. Explain Thevenin's theorem with suitable example. 5

or

Explain Maximum power transfer theorem with suitable example.

3. (a) Find the value of v_p for the circuit as shown in fig 2 using superposition theorem. Also find the power consumed by 50 ohm resistor. 5

Fig. 2



4. Determine v_c (t) and v_o (t) as labeled in the circuit represented in Fig. 3 for t equal to 4
(a) 0^- (b) 0^+ (c) 10 ms (d) 12 ms.

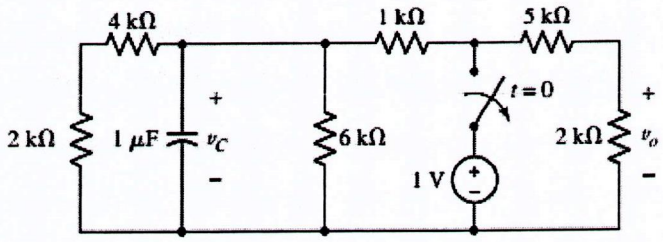


Fig 3

5. Refer to the network in Fig. 4. Find the following transfer functions: 5
(a) $V_o(s)/V_s(s)$
(b) $V_o(s)/I_s(s)$
(c) $I_o(s)/I_s(s)$
(d) $I_o(s)/V_s(s)$

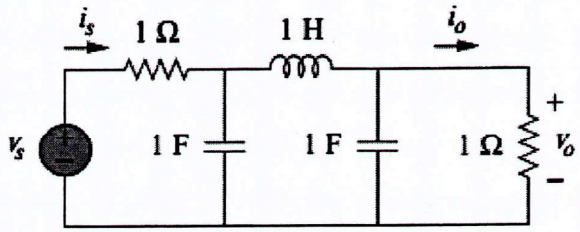


Fig 4