Roll No. _____

Thapar University, Patiala
Electrical & Instrumentation Engineering Department

B.E. Third Year (ELE) **Sept. 23, 2016** **Mid Semester Test**
UEE503: NETWORK ANALYSIS AND SYNTHESIS

Time: 2.00 hrs. ; M.M.:30

Name of Faculty: NN, GRB

Note: (i) Attempt all questions in a given sequence only.
(ii) Assume suitable data if found missing.

1. Compute $Vo(t)$ for the circuit shown in Fig. (1) using Thevenin's theorem. Assume all initial conditions are zero.
2. Compute $i(t)$ for the circuit shown in Fig. (2). Assume all initial conditions are zero.
3. State the maximum power transfer theorem for A.C. circuit and derive the condition for it.

(4×3)

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4. Compute $Vo(t)$ for the circuit shown in Fig. (3) using Norton's theorem.
5. Calculate the branch voltage and branch currents, using current variable OR voltage variable method of the network shown in Fig. (4).
6. For a circuit, the tree of the graph of Fig. 5(a) is as shown in Fig. 5(b). The tree branches are [1,3,4,5,6]. For this, write the cut-set and tie set schedule. (6×3)

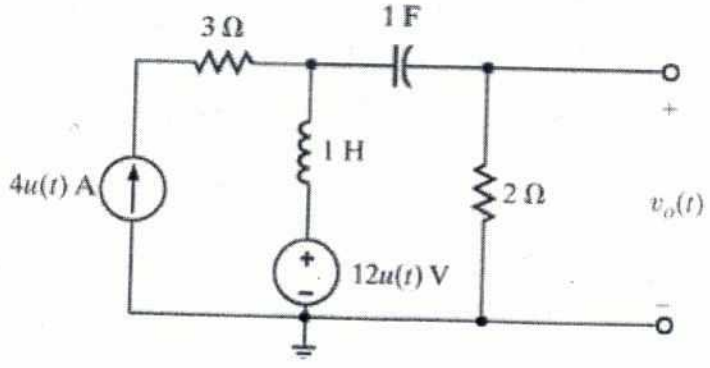

Fig 1

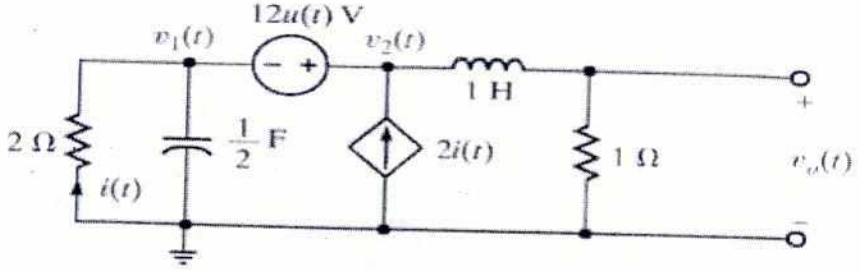

Fig 2

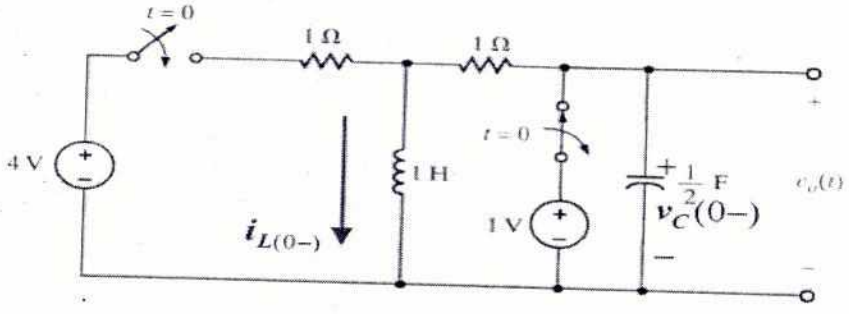

Fig 3

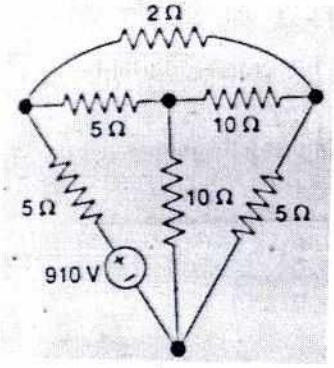

Fig 4

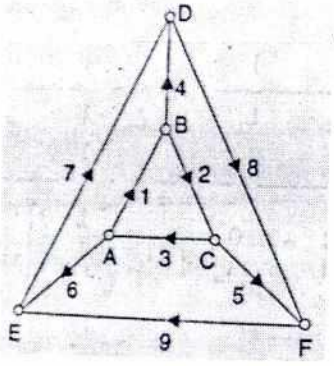

Fig 5 (a)

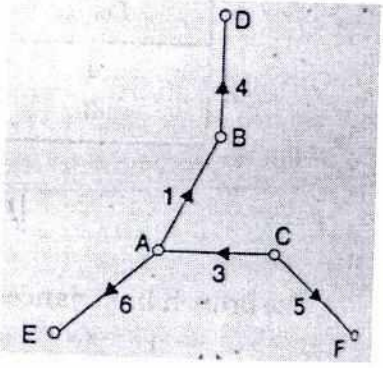

Fig 5 (b)