Total No. of Questions – [04] Total No. of Printed Pages 03

G.R. No.	

U218-136 (T1)

OCTOBER 2018/IN-SEM (T1)
S. Y. B. TECH. (E & TC) (SEMESTER - I)

COURSE NAME: NETWORK THEORY

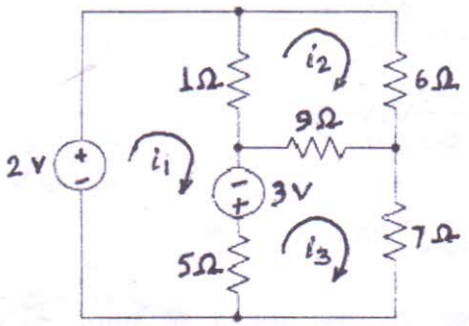
COURSE CODE: ETUA21176

(PATTERN 2017)

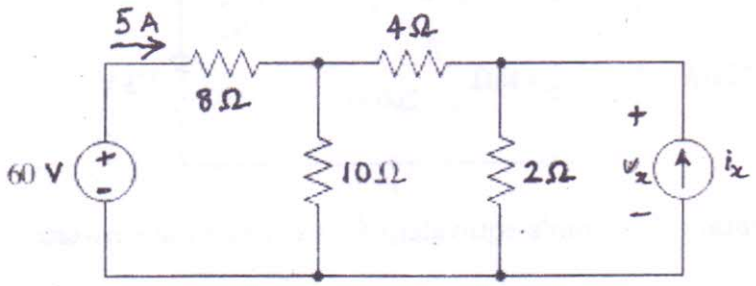
Time: [**1Hour**] [Max. Marks: **30**]

(*) Instructions to candidates:
1) **Answer Q.1 OR Q.2 and Q.3 OR Q.4.**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data wherever required**

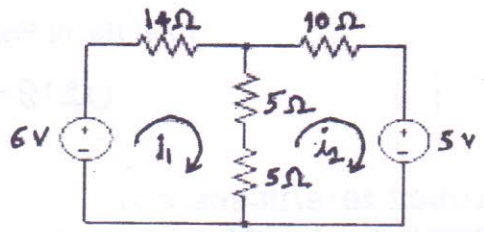
Q1 a) Determine all mesh currents. [6]



b) Determine Vx using KCL and KVL equations. [6]

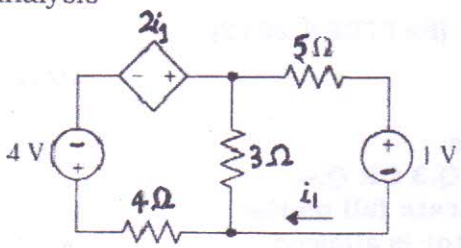


c) Apply loop analysis to determine loop currents in the following network [4]

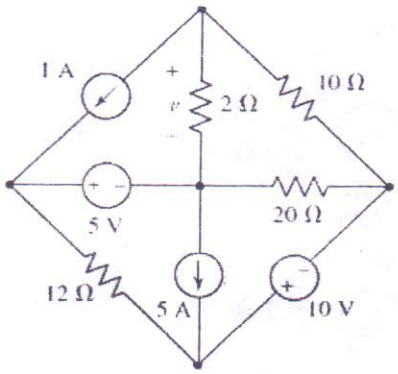


OR

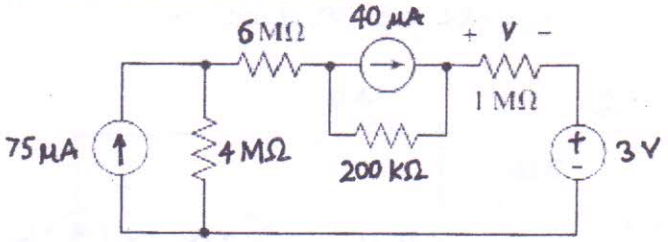
Q2 a) Determine power dissipated in 4 ohm resistor using mesh analysis [6]



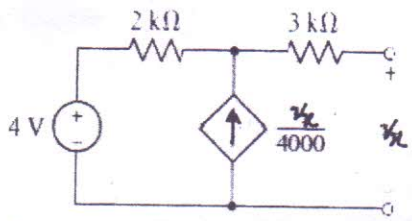
b) Determine the voltage v across 2 ohm resistor using nodal analysis [6]



c) compute the voltage Vacross the 1 M ohm resistor using repeated source transformations. [4]

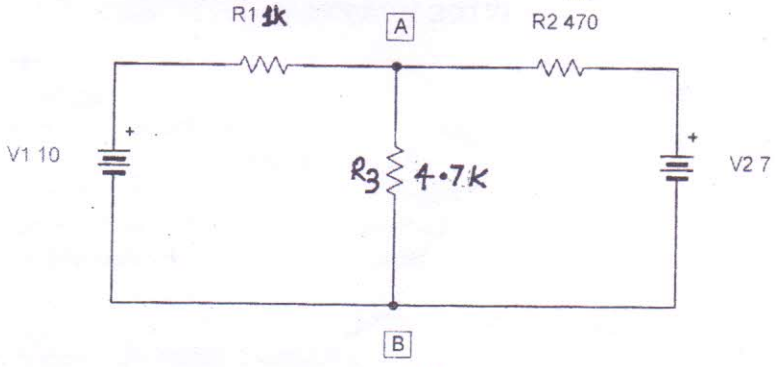


Q3 a) Obtain Thevenin's equivalent for the following network [6]



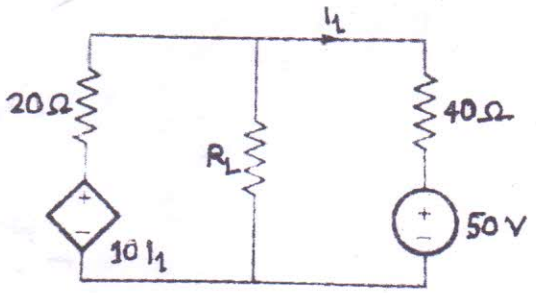
b) State and prove maximum power transfer theorem for network with reactive components. [4]

c) Apply superposition theorem to the following network and find the current through 4.7 K resistor that is I_{AB} [4]

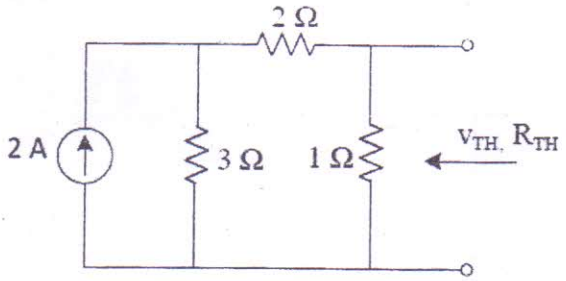


OR

Q4 a) Determine the value R_L to happen maximum power transfer [6]



b) [4]



c) State and explain Superposition theorem (Linearity Principle) with suitable example [4]