

Total No. of Questions : 4]

SEAT No. :

PA-4965

[Total No. of Pages : 2

[6008]-214

S.E. (Electrical) (Insem)

NETWORK ANALYSIS

(2019 Pattern) (Semester - II) (203147)

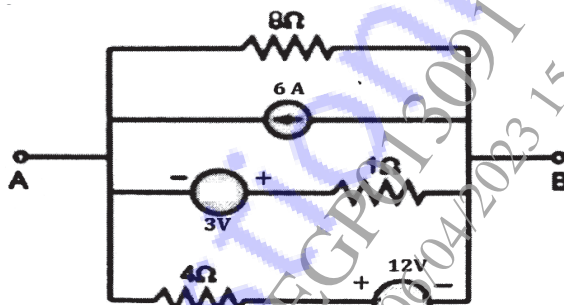
Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.

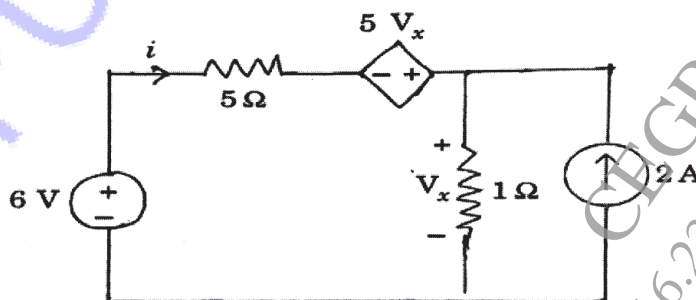
Q1) a) Using Source Transformation reduce the given circuit into single Voltage source series with single resistor. [5]



- b) Define Lumped Network, Non-linear Network, Unilateral Network, Bilateral Network and Time Invariant. [5]
- c) Explain concept of voltage division and current division. [5]

OR

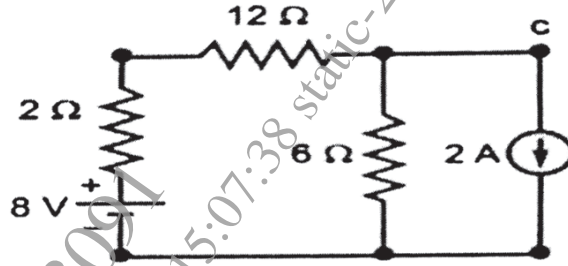
Q2) a) Find i and V_x using mesh analysis : [5]



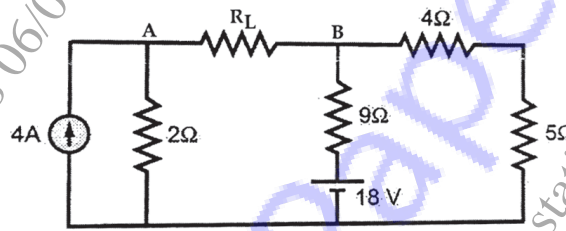
- b) Explain concept of super mesh and super node. [5]

P.T.O.

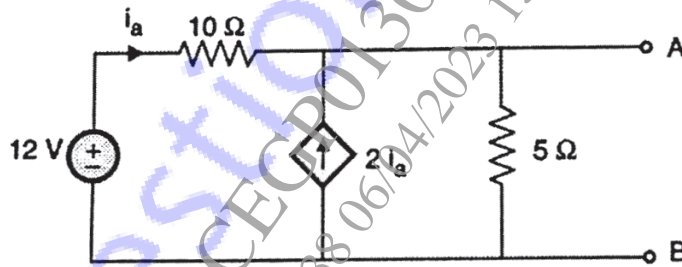
- c) Find current flowing through 12Ω using Node analysis method. [5]



- Q3) a) Calculate value of resistance R_L so as to consumed maximum power. Also Find V^{th} if Maximum Power consumed is $(1/30) W$. [7]



- b) Obtain Norton's equivalent circuit. [8]



OR

- Q4) a) State Thevenin's theorem and describe step-by-step method to solve any circuit branch current using Thevenin's theorem. [7]

- b) Find V_x using Superposition Theorem. [8]

