Total No. of Questions : 4]

SEAT No. :

PA-4965

[Total No. of Pages : 2

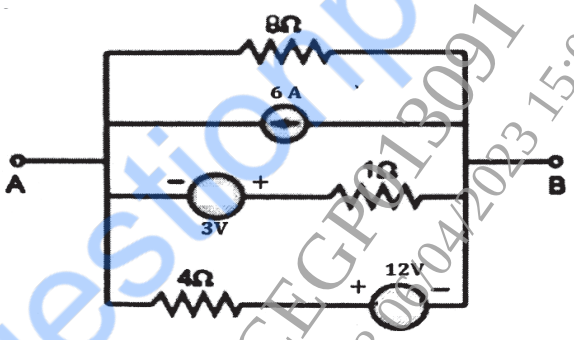
[6008]-214
S.E. (Electrical) (Insem)
NETWORK ANALYSIS
(2019 Pattern) (Semester - II) (203147)

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]**

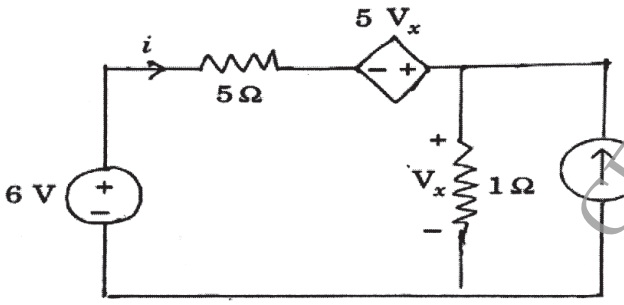


b) Define Lumped Network, Non-linear Network, Unilateral Network, Bilateral Network and Time Invariant. **[5]**

c) Explain concept of voltage division and current division. **[5]**

OR

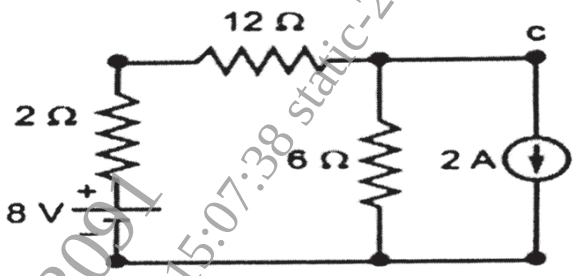
Q2) a) Find i and Vx using mesh analysis : **[5]**



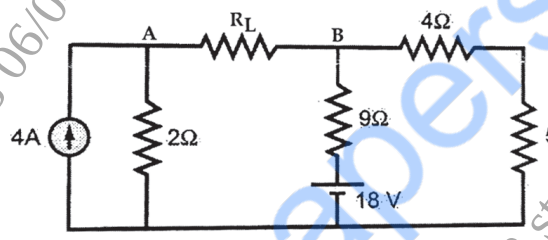
b) Explain concept of super mesh and super node. **[5]**

P.T.O.

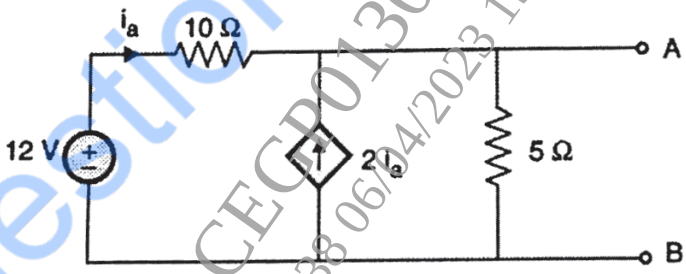
c) Find current flowing through 12Ω using Node analysis method. **[5]**



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 Vx using Superposition Theorem. **[8]**