Total No. of Questions : 4]

SEAT No. :

PF202

[Total No. of Pages : 3

APR-26/SE/Insem-248

S.E. (Electrical Engineering) (Insem)

NETWORK ANALYSIS

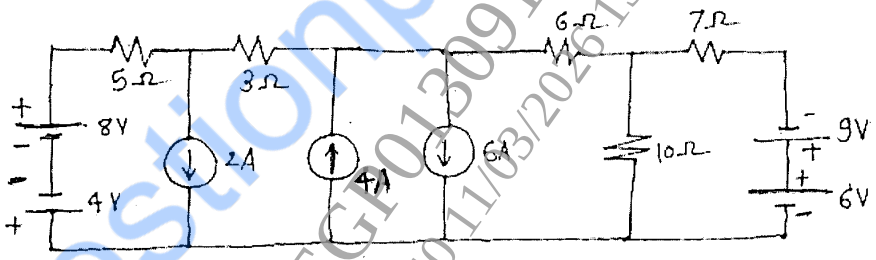
(2019 Pattern) (Semester-IV) (203147)

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

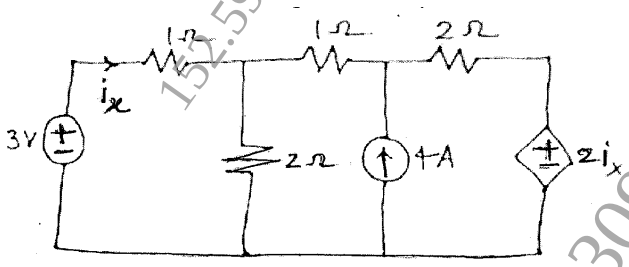
Instructions to the candidates:

1) *Answer Q.1 or Q.2 and Q.3 or Q.4.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Use of non-programmable calculator is allowed.*
5) *Assume suitable data, if necessary.*

Q1) a) Using Source Transformation, calculate power dissipated in 10Ω resistor in the circuit below. **[7]**

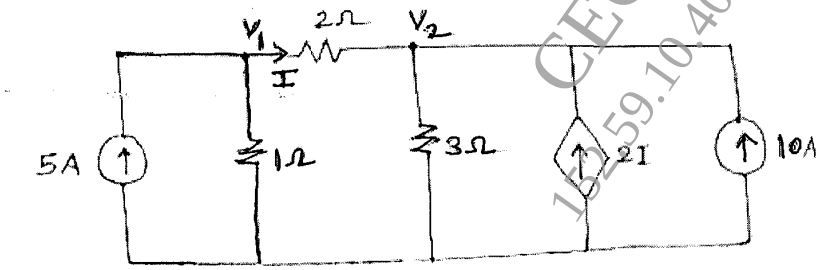


b) Find current i_x in the circuit below using Mesh Analysis. **[8]**



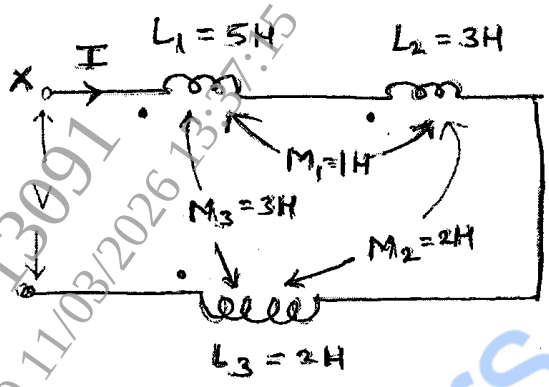
OR

Q2) a) Find voltages V_1 and V_2 using Nodal Analysis. **[7]**

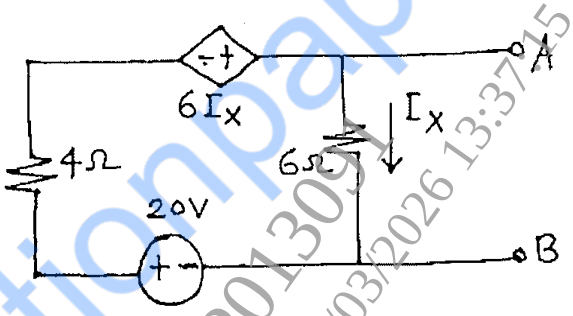


P.T.O.

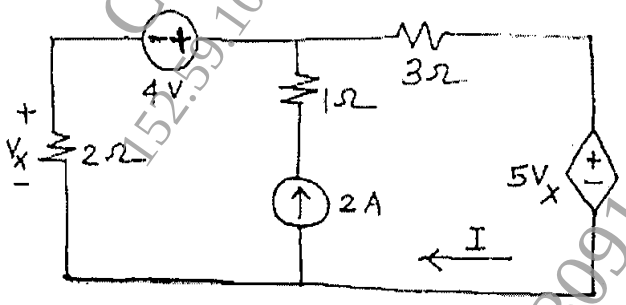
b) Calculate effective inductance between terminals X and Y for the circuit below: **[8]**



Q3) a) What resistance connected between A & B will receive maximum power? Also, find the value of maximum power that will be delivered. **[7]**

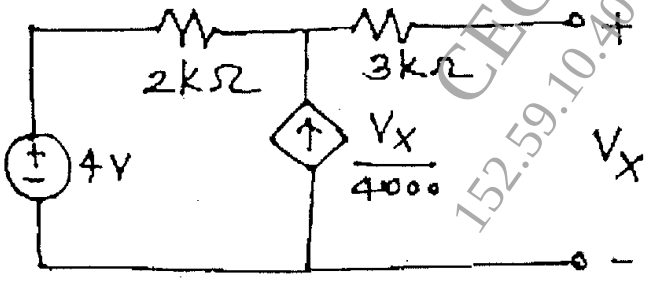


b) State Superposition Theorem and hence find current I using Superposition Theorem. **[8]**



OR

Q4) a) Obtain Thevenin's equivalent circuit of the network below. **[7]**



b) State Reciprocity Theorem and hence verify it for the circuit below by considering current source as excitation and voltage V_c as response. **[8]**