

Total No. of Questions : 4]

SEAT No. :

PD15

[Total No. of Pages : 2

[6409]-208

S.E. (Electrical) (Insem)  
NETWORK ANALYSIS  
(2019 Pattern) (Semester - IV) (203147)

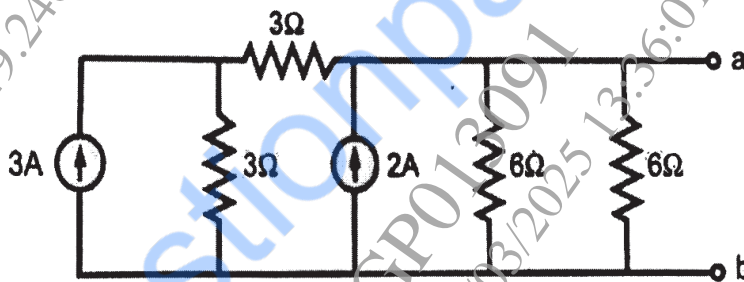
Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q. 2, 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.

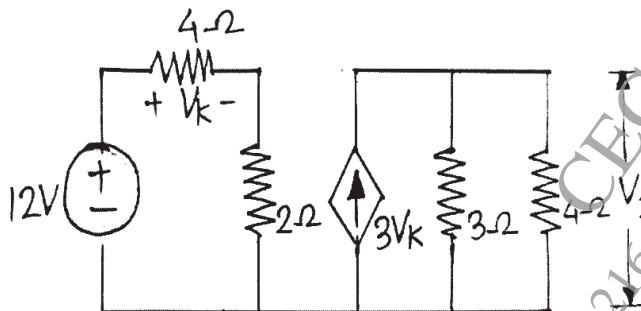
Q1) a) Using source transformation reduce the given circuit into single Voltage source series with single resistor. [7]



- b) i) Define Distributed Network, Linear Network, Bilateral Network and Time Variant. [8]
- ii) What is super node and explain the super node concept with example.

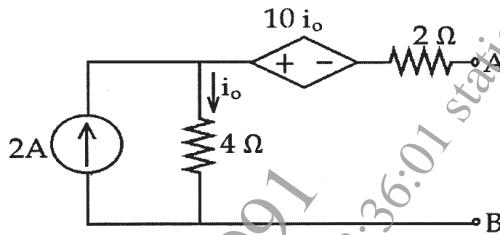
OR

Q2) a) Find  $V_1$  and  $V_k$ . [5]

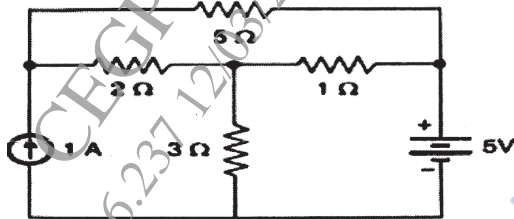


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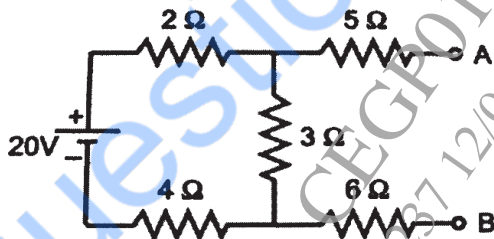
- b) Find  $V_{AB}$ . [5]



- c) Find current flowing through  $2\Omega$  using Mesh analysis method. [5]



- Q3) a) State maximum power transfer theorem applied to A. C. circuit. Explain the condition for maximum power transfer. [7]  
 b) Obtain Thevenin's equivalent circuit. [8]



OR

- Q4) a) State Norton's theorem and describe step-by-step method to solve any circuit branch current using Thevenin's theorem. [7]  
 b) Find  $I$  using superposition theorem. [8]

