

Register Number
Name of the Candidate:

M.Sc. DEGREE EXAMINATION, May 2015

(ELECTRONIC SCIENCE)

(SECOND YEAR)

620: NETWORK ANALYSIS

Time: Three hours

Maximum: 100 marks

SECTION-A

(5×4=20)

Answer any FIVE questions

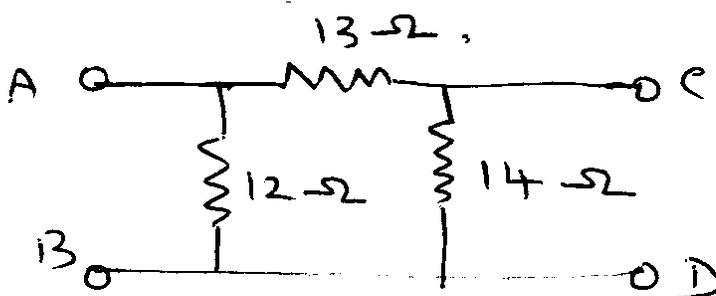
1. State and explain Reciprocity Theorem.
2. What are the steps to be followed to draw the dual of any network?
3. What is Tree? Consider a graph of your choice and establish that the number of branches in a graph is equal to the number of tree branches plus the number of link branches.
4. What is called Tie-set schedule?
5. Briefly explain inverse hybrid (g) parameters.
6. Explain High pass filter and band elimination filter.
7. Briefly explain m-derived T-section low pass filter.
8. Define attenuation offered by a network in decibel express the different forms of it.

SECTION-B

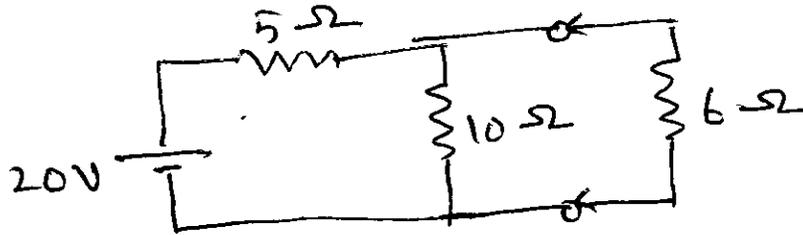
(5×16=80)

Answer any FIVE questions

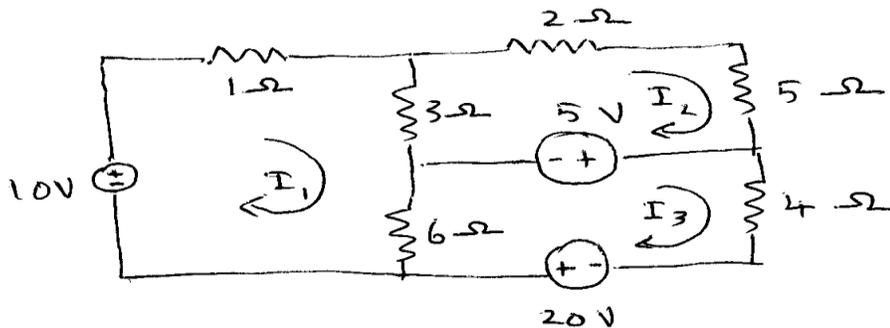
9. i) Show that any resistance of the star circuit is equal to the product of two adjacent resistance in delta connected circuit divided by the sum of all resistances in delta connected circuit.
ii) Obtain the star connected equivalent in the delta connected circuit shown:



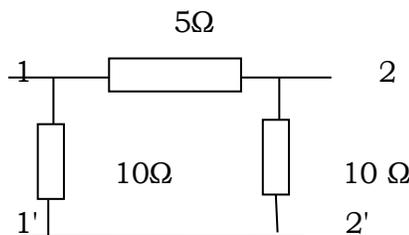
10. State and prove Norton's theorem. Apply Norton's theorem, find the voltage across the 6Ω resistor of the given circuit.



11. i) How will you arrive the mesh equations for a general planar network by inspection method?
 ii) Write the mesh equations for the circuit shown below by inspection method.



12. i) Explain nodal analysis and find the voltages at each node in network.
 ii) Write a note on source transform technique.
13. i) Consider a general two port network. Derive the expression for Y-Parameters.
 ii) What are inverse transmission parameters(A' B'C'D') and define these parameters?
14. i) Consider a two-port network with three impedances connected together in the form of T. Find the relations of impedances interms of ABCD parameters.
 ii) Obtain the lattice equivalent of a symmetric π -network shown below:



15. Discuss in detail constant $-K$ low pass filter with suitable graphics.
 16. With diagram discuss in detail lattice attenuator.