SHRI RAMSWAROOP MEMORIAL UNIVERSITY
PROBLEM SET – I

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Session	: 2016-17(Even Sem.)	**Semester**		: I
Course	: B.Tech.	**Subject Code**		: BEE 2001
Branch	:CS	**Subject Name**		: Electrical Engineering
Group	: 21,22,23,24,25,26	**Name of Faculty Member**		:Dr. Shikha Singh, Mr. Gaurav Singh
Unit	: I	**Topic Covered**		:DC Network Analysis

Note: Attempt all the question

UNIT- I

1. Differentiate between the following terms:

    (i)Unilateral and (ii) Bilateral network.

2. A battery having an emf of 105V and an internal resistance of 1 ohm is connected in parallel with dc generator of emf 110V and internal resistance of 0.5 ohm to supply a load having a resistance of 8 ohm. Calculate (a) the currents in battery, generator and load.
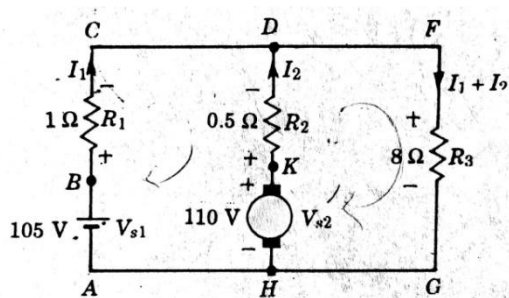

3. (i) What is the source conversion? Explain it in detail.

    (ii) How source conversion is useful for drawing thevenin's & norton's equivalent circuit?

4. (i) State superposition theorem.

    (ii) Write down the necessary condition for applying the superposition theorem.

    (iii) What are the shortcomings of superposition theorem?

5. (i) State maximum power transfer theorem. And also write the condition for maximum power transfer.

6. (i) Explain KCL and KVL. How both are applicable to node and mesh analysis?

    (ii) Determine unknown current I using Node and Mesh analysis for the circuits given below:
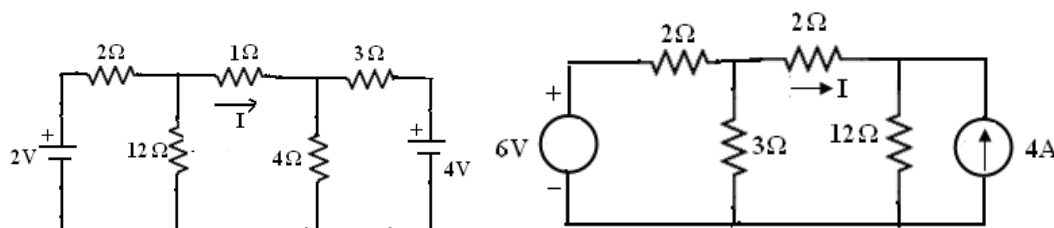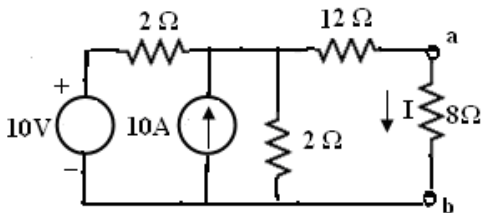

7. (i) Explain Thevenin's & Norton's theorem.

    (ii)Draw Thevenin's& Norton's equivalent circuit at the terminals a,b for the given circuits.
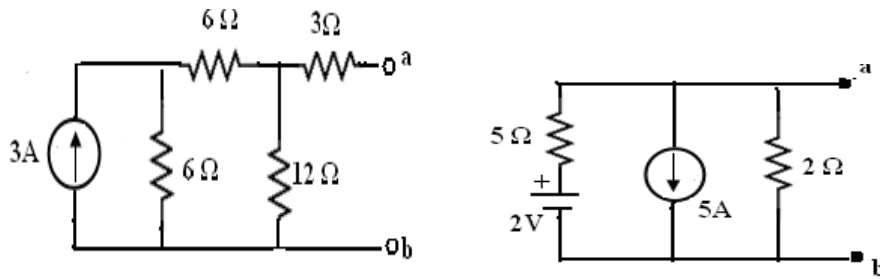
8. (i) Determine the value of the unknown load resistance for the maximum power transfer for the circuit given below.

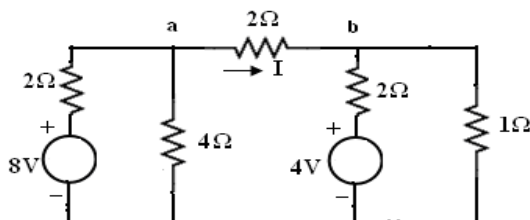(ii) Find the maximum power transferred in each circuit given below.
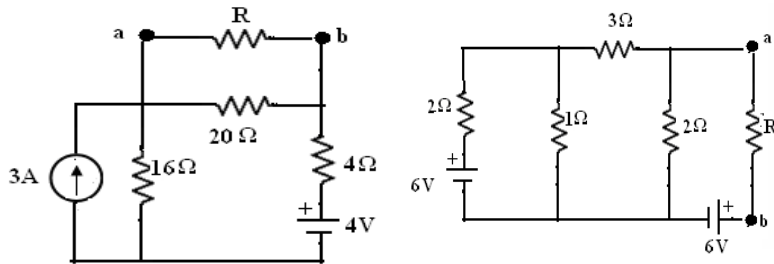
9. Determine current I in the following circuit using (i) Thevenin's theorem and (ii) Norton's theorem.

10. Determine current through and voltage across 25 ohm resistor using Thevenin's theorem.
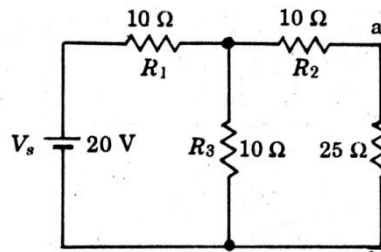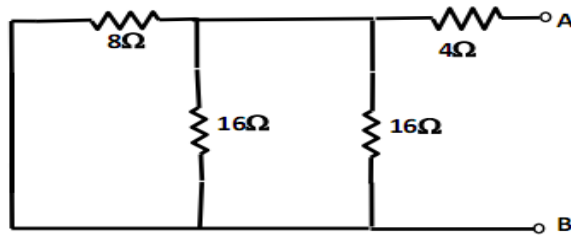

11. Determine current I in the following circuits using (i) Thevenin's theorem and (ii) Norton's theorem.

12. Determine current I in each circuit given below using Superposition theorem.
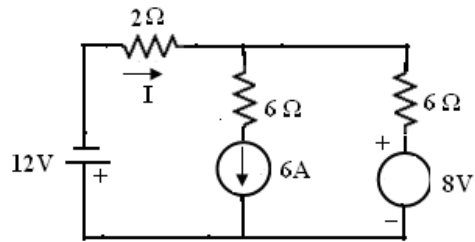
13. Find Equivalent resistance across terminal A and B.

Text / Reference Books:

Text Books:

T1. D.P.Kothari, I.J. Nagrath 'Basic Electrical Engineering' Mc Graw Hill, Third Edition

T2. K.Uma Rao 'Basic Electrical Engineering' Pearson Education Limited,

Reference Book:

R1. J.B.Gupta'A Text Book of Electrical Engineering', S. K. Katariya& Sons, 6th Revised Edition-2009.

(Signature of the Faculty Member with date)   **(Signature of the Dean with date)**