JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-II Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 18B11EC211(4) MAX. MARKS: 15

COURSE NAME: Electrical Sciences

COURSE INSTRUCTORS: Prof. Rajiv Kumar, Dr. Harsh Sohal, Dr. Shweta Pandit, Dr. Salman Raju, Dr. Nishant Jain and Lt. Pragya Gupta MAX. TIME: 1 Hour

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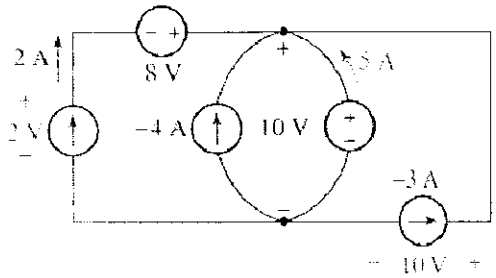
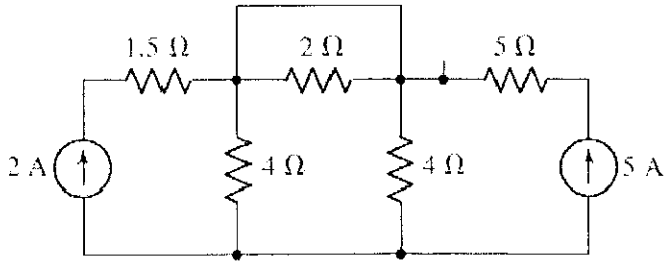
Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	Determine the power supplied by the leftmost element in the circuit of figure below.  Fig. 1.		3
Q2	Referring to the circuit depicted in Fig. 2, Redraw the circuit with effective circuit elements and the give the count of effective (a) nodes; (b) elements; (c) branches. In the circuit.  Fig. 2.		3
Q3	(a) In the circuit shown in Fig. 3, the resistor values are unknown, but the 2 V source is known to be supplying a current of 7 A to the rest of the circuit. Calculate the current labeled i2.		2+2=4

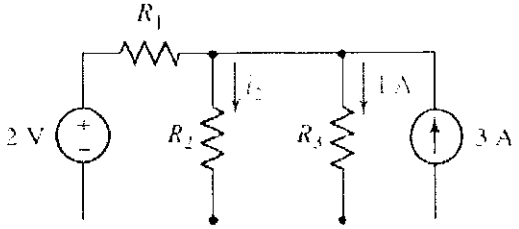


Fig. 3

(b) In the circuit of Fig. 4, it is determined that v1 = 3 V and v3 = 1.5 V. Calculate vR and v2.

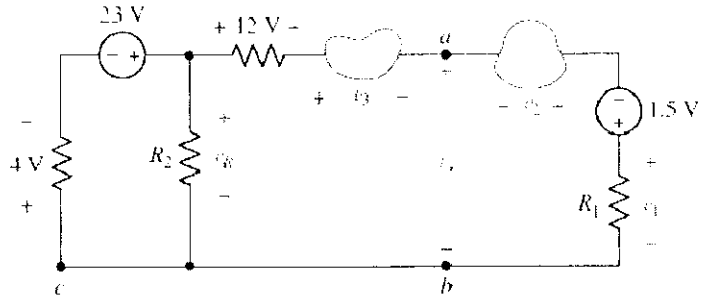


Fig.4.

Q4 In the circuit of Fig. 5 below, determine the current labeled i with the assistance of nodal analysis techniques. 2

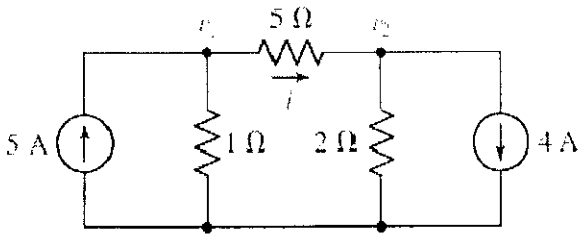


Fig. 5.

Q5 Employing the supermesh technique to best advantage, obtain numerical values for each of the mesh currents identified in the circuit depicted in Fig. 6. 3

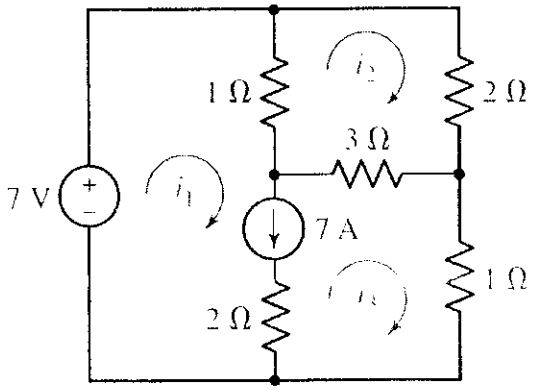


Fig. 6.