



C16-EC-305

6236

BOARD DIPLOMA EXAMINATION, (C-16)  
OCT/NOV—2017  
DECE—THIRD SEMESTER EXAMINATION  
NETWORK ANALYSIS

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

10×3=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

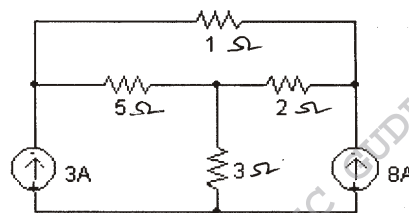
1. Define active element and write any three examples.
2. State ohm's law and mention any three limitations.
3. Define the terms (a) branch, (b) node and (c) loop in circuits.
4. Write about duality of a network.
5. State the importance of impedance matching.
6. State Norton's theorem.
7. Define the terms initial condition and transient condition.
8. Write Laplace transforms of unit step function, exponential function, sine function.
9. Define the terms (a) neper and (b) decibel.
10. List different types of attenuators.

**PART—B**

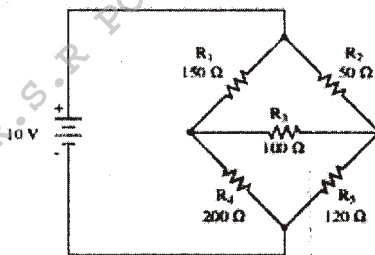
10×5=50

- Instructions :** (1) Answer *any five* questions.  
 (2) Each question carries **ten** marks.  
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

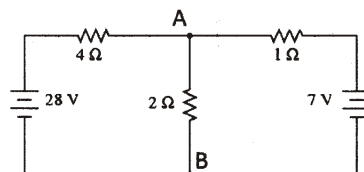
11. (a) State Kirchoff's current law and Kirchoff's voltage law. 5  
 (b) Convert ideal voltage source to ideal current source and vice versa.
12. Find the voltage across 2 ohm resistor by using node voltage analysis. 10



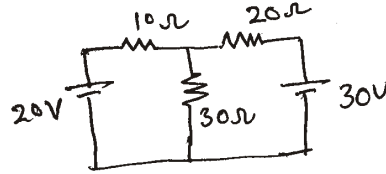
13. Solve for mesh currents using Cramer's rule for the given network below. 10



14. Draw the thevenin's equivalent network for the given network between A and B. 10



- \* 15. Find the current through 30 ohm resistor by using superposition theorem. 10



16. Explain second shifting property with one example. 10
17. Explain the DC response of an series RLC circuit. 10
18. Explain attenuators with circuit diagram. 10

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