

BITT POLYTECHNIC, RANCHI
DEPARTMENT OF ELECTRICAL ENGG.

NETWORK THEORY

4TH SEM EE

1. Potential difference in electrical terminology is known as?
 - a) Voltage
 - b) Current
 - c) Resistance
 - d) Conductance

2. The circuit in which current has a complete path to flow is called _____ circuit.
 - a) short
 - b) open
 - c) closed
 - d) open

3. If the voltage-current characteristics is a straight line through the origin, then the element is said to be?
 - a) Linear element
 - b) Non-linear element
 - c) Unilateral element
 - d) bilateral element

4. The energy stored in the inductor is?
 - a) $Li^2/4$
 - b) $Li^2/2$
 - c) Li^2
 - d) $Li^2/8$

5. How many types of dependent or controlled sources are there?
 - a) 1
 - b) 2
 - c) 3
 - d) 4

6. If the resistances 1Ω , 2Ω , 3Ω , 4Ω are parallel, then the equivalent resistance is?
 - a) 6Ω
 - b) 4Ω
 - c) 5Ω
 - d) 5Ω
 - e) None of the above

7. If the resistances 3Ω , 5Ω , 7Ω , 9Ω are in series, then their equivalent resistance(Ω) is?
 - a) 9
 - b) 20
 - c) 24
 - d) 32

8. Mesh analysis is applicable for non planar networks also.

- a) true
- b) false

View Answer

9. A mesh is a loop which contains ____ number of loops within it.

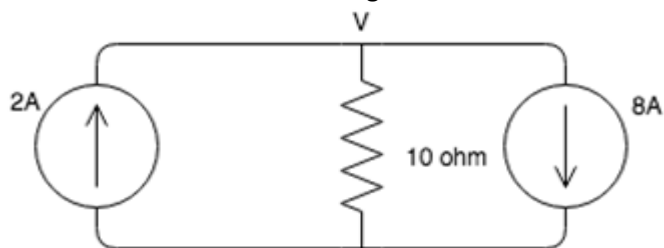
- a) 1
- b) 2
- c) 3
- d) no loop

10. The flow of electric current in a conductor is due to the flow of

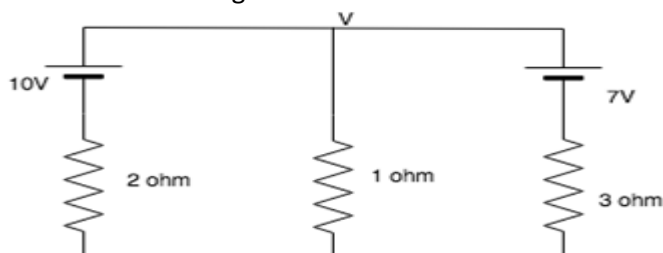
- a) Electrons
- b) Protons
- c) Electrons and ions
- d) Charged particles

Short Type Question.

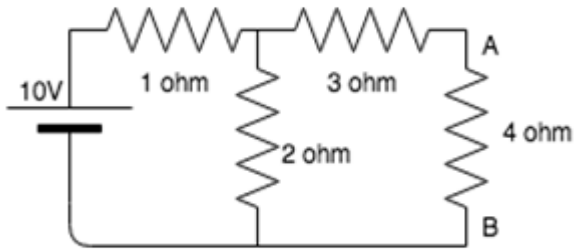
1. State KCL and KVL with suitable diagram and equations.
2. State and explain Superposition Theorem.
3. How many types of sources are? explain any two independent sources.
4. Find the Laplace transform of the function $f(t) = t$.
5. Find the Laplace transform of the function $f(t) = \sin at$.
6. Find the value of the node voltage V .



7. Find the node voltage V .

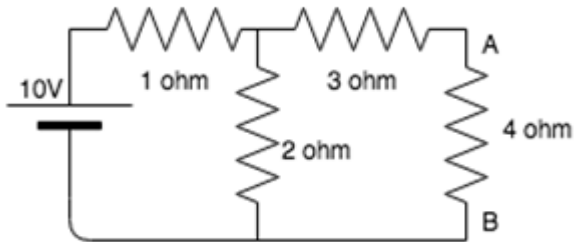


8. State and explain Thevenin's theorem with derivation.
9. State and explain Norton's theorem.
10. Calculate the Thevenin resistance across the terminal AB for the following circuit.

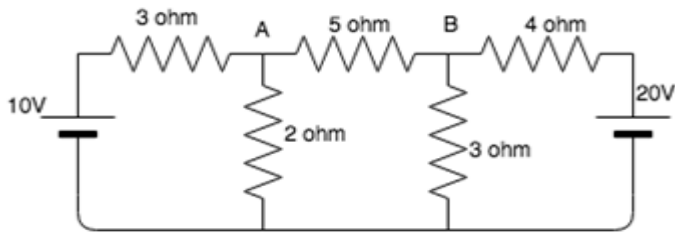


Long Type Question

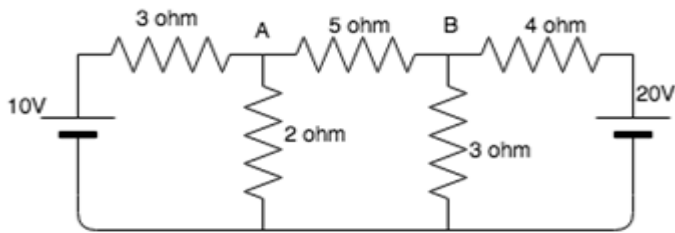
11. Calculate the current across the 4 ohm resistor.



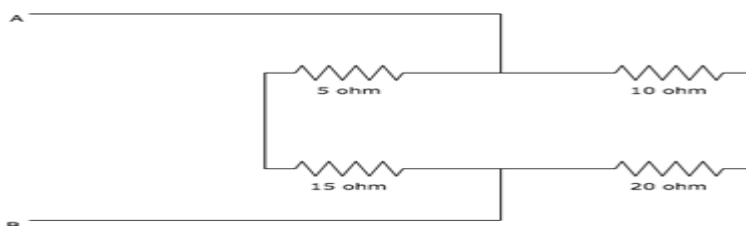
12. Calculate the value of R_L across A and B.



13. Calculate the maximum power transferred.



14. Calculate the equivalent resistance between A and B.



15. Find the laplace transform of fuctionf(t) = Coshat.

Answer of Objective questions.

1. A, 2. C, 3. A 4. B 5. D 6. E. 7. C 8. False 9. D, 10. A