

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
Diploma Engineering, Mid semester Examination

Semester: 3rd Sem
Subject Code: (03608207)
Subject Name: Electronic Devices and Circuits

Date: (10/08/2022)
Time: (1hr: 30min)
Total Marks: 40

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered to be Authentic.

- Q.1 Answer any six out of Ten. (2 Marks Each) (12)**
1. Define: Kirchhoff's current law with example.
 2. What is Active Element?
 3. Define: Superposition theorem.
 4. Define: Mesh.
 5. What is Loop?
 6. What is Network?
 7. What is Active Network?
 8. Define: Node
 9. What is Branch?
 10. What is Passive Network?
- Q.2 A) Using Thevenin's theorem find the current through the resistance R and voltage across it for the circuit shown in Figure.1 (03)**
- OR**
- A) Explain Kirchhoff's voltage law (KVL) with example. (03)
- B) Find V_{TH} , R_{TH} and the load current I_L flowing through and load voltage across the load resistor in Figure.2 by using Thevenin's Theorem. (03)
- OR**
- B) Explain Maximum Power Transfer Theorem. (03)
- C) Find the Norton's equivalent circuit at terminals A-B for the circuit shown in Figure.4 and calculate value to I_L , using equivalent circuit. (04)
- OR**
- C) Draw R-L and R-C circuits and write the applications of R-L-C circuits. (04)
- D) Explain Norton's Theorem with Example. (04)
- Q.3 A) Write down Thevenin's Theorem and explain it. (03)**
- OR**
- A) Solve the given circuit in Figure.5 to find the current through $10\ \Omega$ using Thevenin's Theorem. (03)
- B) Explain Voltage Divider rule with one example. (03)
- OR**
- B) Find the current through $10\ \Omega$ resistor in Figure.3 using Norton's theorem. (03)
- C) Explain Current Divider rule with one example. (04)
- OR**
- C) Determine the current flowing $15\ \Omega$ resistor using Norton's theorem for Figure.6. (04)
- D) Explain Superposition theorem with examples. (04)

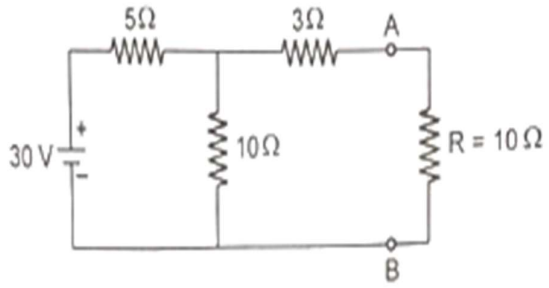


Figure.1

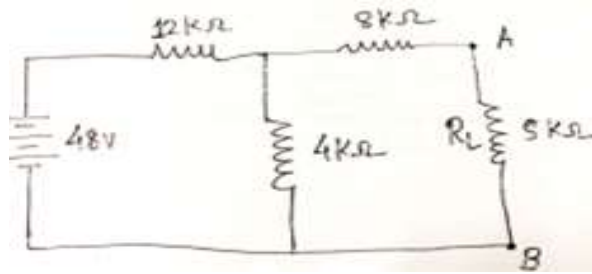


Figure.2

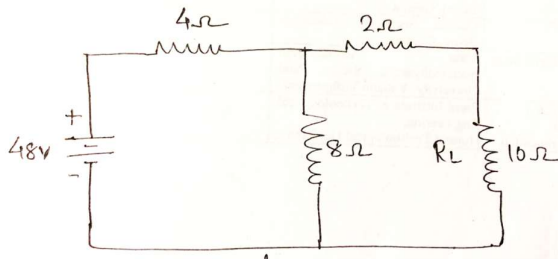


Figure.3

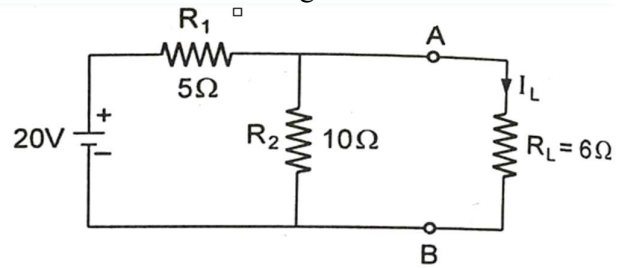


Figure.4

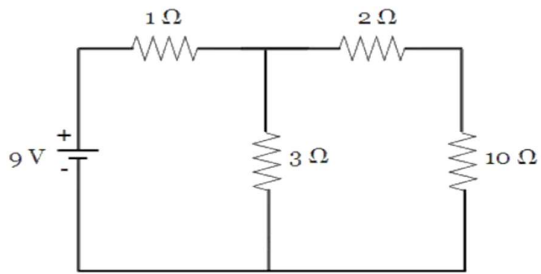


Figure.5

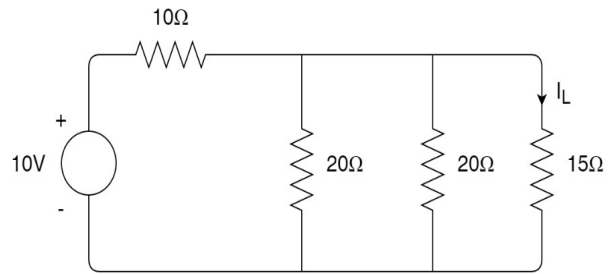


Figure.6