ST. JOSEPH'S COLLEGE(AUTONOMOUS), BENGALURU-27
B.SC. ELECTRONICS- I SEMESTER
MID SEMESTER TEST – AUGUST 2018
EL118: BASIC ELECTRONICS 16-8-18

TIME :1hour **Max Marks: 30**

This question paper has 2 printed pages and 3 parts.

PART A

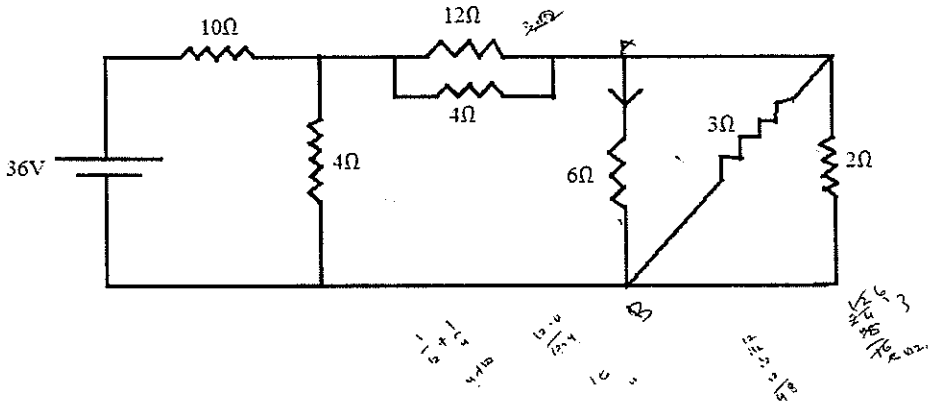
Answer any 3 questions. **3x5=15**

1. Explain the construction of an electrolytic capacitor and mention its merits and demerits over other types.
2. a) State and explain Kirchoff's law.
   b) What is a stiff voltage source?
3. Obtain V-I characteristics of a Silicon diode with the help of necessary diagrams and explain. Describe the phenomenon of Avalanche breakdown in the diode.
4. Explain the working of a center tapped full wave rectifier and derive its output dc voltage.

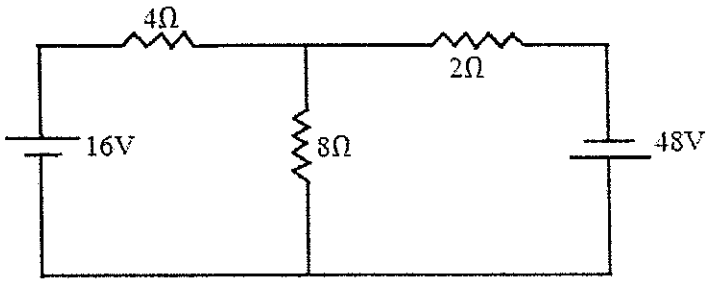
PART-B

Answer any 3 questions. **3x4=12**

5. Determine the current in 6Ω resistor.



6. Find current in 8Ω resistor using Mesh analysis.



7. Determine the range of R_L for the Zener regulator to give an output of 10V. Given V_{in}=40V, R_S=1K, P_Z=0.25W.
8. A 10:1 transformer is driven by 220V, 50Hz ac voltage which is connected to a bridge rectifier circuit with 1kΩ load resistor. Determine ripple voltage and efficiency of the circuit.

PART-C

Answer any 3 questions. **3x1=3**

9. Large value current sources are seldom found. Give reasons.
10. What is meant by linear bilateral network?
11. PIV of a diode is important while designing a rectifier. Justify?
12. Pi section filters are not used at the output of a rectifier. Substantiate.

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