

Bachelor of Science (F.Y.B.Sc.) First Semester
E-02 - Electronics Paper-II (Transducers and Network Theorems)

P. Pages : 2

Time : Three Hours



GUG/W/18/1207

Max. Marks : 50

- Notes :
1. All questions are compulsory and carry equal marks.
 2. Draw a neat diagrams wherever necessary.
 3. Use of log table/calculator is allowed.

1. Either
- a) What is transducer? 1+6+3
Explain active and passive transducer with suitable example. Give the classification of transducer on the basis of quantities to be converted.

OR

- b) What is LVDT? 6+4
Explain construction and working of LVDT with suitable diagram. Draw its characteristics and explain.

2. Either
- a) What is solar cell? 5+5
Explain the construction and working of solar cell.
Explain construction and working of LDR.

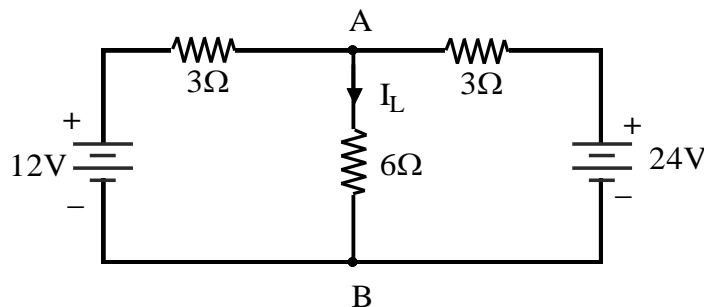
OR

- b) Explain the working of LASER diode with suitable diagram. 5+5
Explain the construction and working of LED.

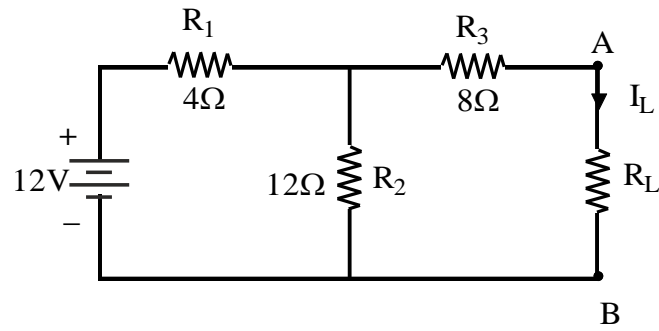
3. Either
- a) Explain ideal and practical voltage source. Draw its characteristics. 7+3
Define: Mesh, node and loops in networks.

OR

- b) State and explain the superposition theorem. 4+6
Using superposition theorem, find the current through 6Ω resistor in the following circuit.

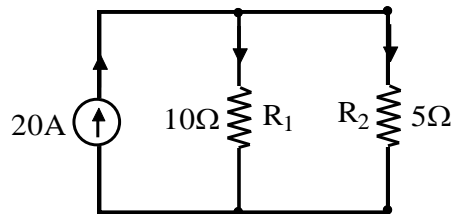


4. Either
- a) State and prove Thevenin's theorem. Using Thevenin's theorem find the current through R_L in the following circuit. 6+4



OR

- b) State and prove Milliman's theorem. State and explain Maximum transfer theorem. 5+5
5. a) Explain the construction of loudspeaker. 2½
- b) Explain the operation of photovoltaic cell. 2½
- c) Find the current through R_1 and R_2 using current divider method in the following circuit. 2½



- d) State and explain Norton's theorem. 2½
