E-02-Electronics : Paper-II (Transducers and Network Theorems)

P. Pages : 2

Time : Three Hours

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GUG/S/17/3308

Max. Marks : 50

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

Either

1. a) What is thermistor ? Explain construction and working of thermistor. Explain the construction and working of thermocouple. **5+5**

OR

   b) Explain construction and working of LVDT. Draw its characteristics and explain. State the advantages of LVDT. **10**

Either

2. a) What is LDR ? Explain the construction and working of LDR. State any four uses of LDR. Explain working of photovoltaic cell. **7+3**

OR

   b) What is LCD ? Explain construction and working of dynamic scattering type LCD. Explain the working of LASER diode. **6+4**

Either
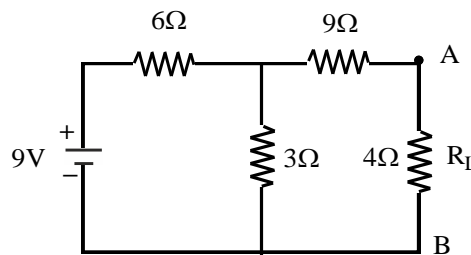
3. a) Explain ideal and practical voltage source with suitable diagram. Explain ideal and practical current source with suitable diagram. **5+5**

OR

   b) State and prove - **5+5**
   i) Kirchoff's voltage law
   ii) Kirchoff's current law

Either

4. a) State and prove Thevenin's theorem. **7+3**
   Using Thevenin's theorem, calculate current through R_L in the following circuit :


OR

b) State and prove maximum power transfer theorem. **7+3**
In the circuit given below, find the value of load resistor R_L to be connected across Terminal A and B which would abstract maximum power from the circuit. Also find maximum power.
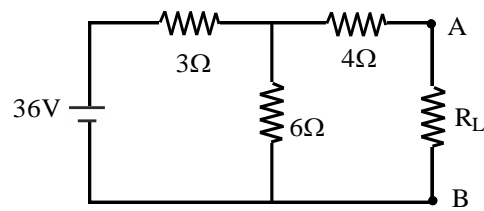
5. a) Define active and passive transducers. Give two examples of each. **2½**

b) State any five uses of LED. **2½**

c) Find the voltage across each resistor using voltage divider method in the following circuit. **2½**
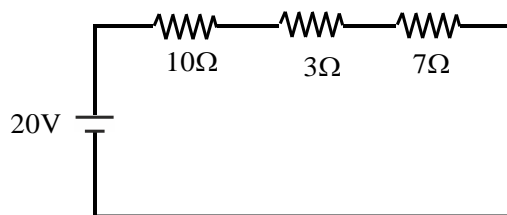
d) State and explain Milliman's theorem. **2½**

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