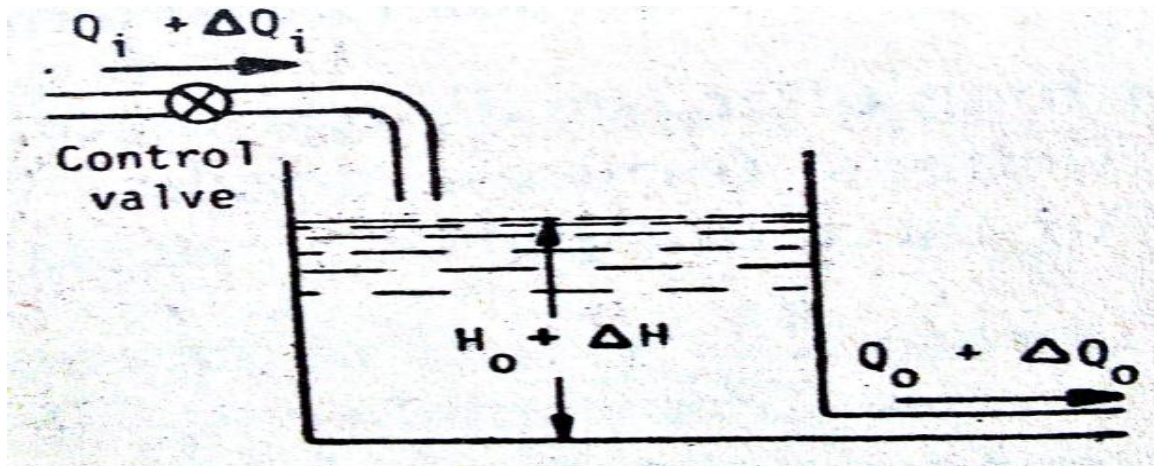


- N.B:
1. Question.No.1 is compulsory.
  2. Attempt any three questions from remaining five questions.
  3. Assume suitable data wherever necessary.

- 1 Attempt the following. 20
  - a Explain fabrication of microsensors.
  - b Explain cold junction compensation w.r.to thermocouple.
  - c Explain major and minor resolution of potentiometric type resistive transducer.
  - d Explain manometers along with its different types.
  
- 2 a Obtain a mathematical modelling of a given liquid level system shown below. 10



- b Explain with respect to Strain Gauge : 10
  - a) Enhancement factor for half bridge and full bridge
  - b) Resistance strain gauge bridges
  - c) Derivation for  $I_G$
  
- 3 a Explain with mathematical expression electromagnetic flow meter. 10
  - b Explain with suitable diagram sensitivity and linearity with respect to inductance transducer with ferromagnetic cores and variable gap. 10
  
- 4 a Explain with block diagram basic and auxiliary functional elements of the measurement systems. 10
  - b Obtain a model of D.C.Armature controlled motor. 10

- 5 a State and explain with its diagram by which capacitance changes. Also explain its equivalent circuit. 10  
b Describe architecture of smart sensors and its capabilities. 10
- 6 a Explain with mathematical analysis of variable area type flow meter. 10  
b Explain with diagram differential pressure transmitter. 10

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