

**Time: 3 Hours**

**Marks: 80**

**N.B:**

- (1) Attempt **four** questions, question **no:1** is Compulsory.
- (2) Assume suitable data wherever required.
- (3) Answers to the questions should be grouped together.
- (4) Figure to the **right** of question indicates **full** marks.

- 1) Attempt any **four:** **20**
  - (a) List names of bridges for RLC measurement with proper classification
  - (b) Write a note on piezoelectric transducer.
  - (c) Compare Analog instrument with digital instrument.
  - (d) Define accuracy, precision and sensitivity with suitable example
  - (e) What is cold junction compensation in thermocouples
  - (f) Describe the various types of sweeps used in CRO
- 2 (a) Explain the components of analog data acquisition system. **10**
  - (b) Explain Kelvin's double bridge and its application in very low resistance measurement. **10**
3. (a) Draw and explain R-2R ladder network DAC for 3 bits input taking suitable example. **10**
  - (b) Draw neat block diagram of Dual Beam oscilloscope. Give the comparison between Dual Trace and Dual Beam Oscilloscope. **10**
4. (a) Explain SAR or Flash type ADC with the help of block diagram and comment on its speed. **10**
  - (b) Define Q factor and explain working of a Q meter for Q factor measurement **10**
5. (a) Explain electrodynamicometer type wattmeter. **10**
  - (b) Draw and discuss Maxwell bridge and its applications for measurement of Inductance **10**
6. (a) Draw and discuss Hey Bridge and its application for measurement of inductance. **10**
  - (b) Explain Heterodyne type wave analyser and its applications **10**

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