

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** out of **remaining six** questions.
 (3) **Figures to right** indicate **full marks**.
 (4) Assume suitable data wherever **necessary**.

1. Solve any **four** of the following :- 20
- (a) Explain piezoelectric transducer for pressure measurement.
- (b) Explain the basic components of a PLC in brief.
- (c) What are sources of errors in Q meter ? How they affect on measurement.
- (d) Differentiate between RTD and Thermocouple.
- (e) What are requirements of good laboratory type signal generator.
2. (a) Explain with neat diagram sampling type CRO. 10
 (b) Draw block diagram of SCADA system, hence explain function of each block. 10
3. (a) Explain digital phase meter ? Draw waveforms at various points. 10
 (b) Discuss impedance measurement using Q meter. 10
4. (a) Explain following High frequency measurement methods. (i) Resonance Method 10
 (ii) Reactance variation Method.
 (b) Explain with block diagram PC based Data acquisition system. 10
5. (a) Explain various principles used for level measurements. 10
 (b) Explain with block diagram working of function generator ? 10
6. (a) What is chopper stabilized amplifier. Explain working of it with proper diagrams and waveforms at various points. 10
 (b) Explain successive approximation type DVM. 10
7. Write short notes on any **three** :- 20
- (a) Strain Gauge (b) Digital Energy Meter
 (c) Storage oscilloscope (d) Digital Multimeter
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