

QP Code : 543100

(OLD COURSE)

(3 Hours)

| Total Marks :100

- N.B. : (1) Question no. **1** is **compulsory**
 (2) Answer **Any four** the remaining **six** questions.

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| 1. Attempt any Four : | 20 |
| (a) Derive expression for gain of instrumentation amplifier with three Op-Amp configuration | |
| (b) Explain the classification of transducers with examples. | |
| (c) Explain Dual beam type oscilloscope. | |
| (d) Explain the block diagram of PLC. | |
| (e) Describe the method for measurement of capacitance, at high frequencies using resonance method. | |
| (f) What are the requirements of a good laboratory type signal generator? | |
| 2. (a) Explain Piezoelectric transducers. | 10 |
| (b) What is SCADA? Explain its different components. | 10 |
| 3. (a) Explain a generalized Data Acquisition System. | 10 |
| (b) Draw the schematic block diagram of a CRO. Explain the functions of each of the Blocks. | 10 |
| 4. (a) Write short note on Function Generators. | 10 |
| (b) Explain Ramp type DVM. Mention its advantages and disadvantages. | 10 |
| 5. (a) Explain the working and characteristics of photodiodes, phototransistors and photovoltaic cells. | 10 |
| (b) Explain the construction and working of Analog storage oscilloscope. Explain the principle of secondary emission. | 10 |
| 6. (a) With neat diagrams explain the working of LVDT. Also mention its advantages and disadvantages. | 10 |
| (b) Explain the principle, working & characteristics of thermocouples. | 10 |
| 7. Write short notes on any two . | 20 |
| (a) Q meters | |
| (b) Digital Frequency meter. | |
| (c) Measurement of Effective resistance of a coil. | |