

SE (Elect) Sem IV (R) 15/15/2009
Subject: Elect Inst & Instru VR-3723

Con. 2850-09.

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

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- N.B. : (1) Question No. 1 is **Compulsory**.
 (2) Attempt any **four** questions out of remaining **six** questions.
 (3) **Figures to the right indicate full marks**

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1. Solve any **four** of the following :—

- (a) Draw front Panel Layout of CRO. Explain in brief implementation of Controls. 5
 - (b) What are requirements of good laboratory type Signal generator ? 5
 - (c) What is Thermistor ? Explain Construction and write applications of it. 5
 - (d) Write General specifications of Digital Voltmeter. 5
 - (e) What is Q of the circuit ? Discuss principle of operation of Q-meter. 5
 - (f) Explain with block diagram, structure of PLC. 5
2. (a) Explain digital phase meter. Draw waveforms at various points. 10
 (b) Discuss impedance measurement using Q-Meter. 10
3. (a) Explain construction and working of RTD. Compare RTD and Thermocouple. 10
 (b) Explain with block diagram Generalized Data acquisition System. 10
4. (a) Starting from first principles prove that the gauge factor of wire is $G = 1 + 2\gamma$. 10
 (b) What are important features of instrumentation amplifier? Explain three OPAMP instrumentation amplifier with proper derivation. 10
5. (a) Explain construction and working of LVDT. Hence write advantages and disadvantages of LVDT. 10
 (b) Explain with block diagram General purpose oscilloscope. 10
6. (a) Explain with block diagram, working of function generator. 10
 (b) Differentiate between Dual Trace and Dual beam Oscilloscopes. 10
7. Write short notes on (Any two) :— 20
- (a) SCADA
 - (b) Digital Energy Meter
 - (c) Storage Oscilloscope
 - (d) Photo electric transducers.