Electronics S.E (E) sem IV Instruments & Instrumentation (R)

VT April 07. 221

Con/2651-07

(REVISED COURSE)

ND-8153

(3 Hours)

[Total Marks : 100

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.

S.E (E) Sem IV Rev Electronics Instrument & Instrumentation 22/5/07

Q.1. Solve any 'FOUR' of the following:

a) What are advantages of Electronic Voltmeter over Conventional Voltmeters? 05

b) What is Delay Line? Why it is included in CRO? 05

c) Explain Peak Reading & Average Reading voltmeters. 05

d) Write Classification of Transducers; Give an Example of each type. 05

e) What is Thermistor? Explain Construction and write applications of it. 05

Q.2.a) Explain Ramp type Digital Voltmeter, Write advantages and disadvantages. 10

b) Describe working of Dual Slope Integrating Digital Voltmeter with Circuit/Block diagram. 10

Q.3.a) Write operation of Analog Electronic Frequency meter, hence write Limitations of it. 10

b) How Lissajous patterns are used for Measurement of Phase and Frequency? Draw Lissajous patterns for different frequency ratios. 10

Q.4 a) Differentiate between Dual Trace and Dual beam Oscilloscopes. 10

b) State requirements of good laboratory type signal generator. Explain Audio Frequency Signal Generator. 10

Q5 a) Explain response of Step input to Second order system. Derive expression for it. 10

b) Explain Construction and Working of RTD. Compare RTD and Thermocouple 10

Q6. a) List Pressure transducers, hence Explain use of Piezoelectric transducer for Pressure measurement. 10

b) What is order of a filter? Explain Second order Low Pass Butterworth filter, Derive transfer function for it. 10

Q7 Write short notes on (Any **TWO**): 20

i) Function Generator
ii) Intensity and Velocity Modulation
iii) Photoelectric Transducers
iv) Digital Phase Meter