

216

S.E. (ETRX) Sem IV (R)

04/06/09

3 p.m. to 6 p.m.

VT-April-09- 256

Con. 2598-09.

(REVISED COURSE)

VR-3762

(3 Hours)

[Total Marks : 100

Electronic & Electrical Measuring Instruments & Machine

- N.B. : (1) Question No.1 is compulsory.
 (2) Attempt any four questions out of remaining six questions.
 (3) Assume suitable data wherever required and state clearly.
 (4) Figures to the right indicate full marks.
 (5) Illustrate answers with sketches wherever required.

1. Answer any four :- 20
 - (a) What are the factors involved in the selection of electronic analog voltmeter ?
 - (b) State the requirements of good laboratory type signal generator.
 - (c) Compare Dual trace and Dual beam CRO.
 - (d) Explain the operation of a meggar.
 - (e) Explain the stepper motor characteristics.

2. (a) What are the different methods of converting analog signal to digital signal ? 10
 (b) State general characteristics of digital voltmeter. Explain with block diagram staircase Ramp type of DVM. 10

3. (a) With a neat block diagram and waveform explain the operation of digital phase meter. State its advantages and limitations. 10
 (b) With the help of neat diagrams explain the working of a digital frequency meter. How it is used for time interval measurement. 10

4. (a) Draw the front panel of CRO and explain the functions of various controls. 12
 (b) Write a note on Digital Storage Oscilloscope. 8

5. (a) With a neat sketch explain the construction and working of a single phase induction type energymeter and show that the total number of revolutions made by the disc during a particular time is proportional to the energy consumed. 10
 (b) With a neat sketch explain three phase Electrodynamometer type power factor meter. Draw the phasor diagram. 10

6. (a) How is Kelvin Double Bridge different from Wheatstone's bridge ? Explain. 10
 (b) Derive the condition of balance of Anderson's Bridge with proper circuit diagram and phasor diagram. 10

7. (a) Explain in steps, how rotating magnetic field is produced in a 3 phase induction motor. Also explain how this field produces torque. 10
 (b) Explain different methods for the speed control of D.C. motor. 10