Con. 5830–09. (REVISED COURSE) SP–7787

31/12/09

S.E. (ETRX) Sem IV (R) 2.30 to 5.30

(3 Hours) [Total Marks : 100

(16) 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** of the following :– **20**
   (a) Compare a true rms meter with an average responding meter
   (b) Explain R–2R ladder method of converting digital voltage to analog voltage
   (c) Describe the working of phase measurement by voltage addition method
   (d) Explain the working of digital frequency meter
   (e) Explain how an oscilloscope displays a signal
   (f) Explain significance of back emf in D.C. motor.

2. (a) Explain the need of starter for Induction motor. What are different types of starter ? Explain any one type of starter. **10**
   (b) State the types of stepper motor ? Explain any one stepper motor in detail. **10**

3. (a) What are different types of analog frequency meter ? Explain the principle, construction and working of any one type. **10**
   (b) With neat diagrams and waveforms, explain the working of a phase meter using flip/flops. **10**

4. (a) State general characteristics of digital voltmeter. Explain with block diagram successive approximation type of DVM. **10**
   (b) What are different methods of converting digital to analog signal ? Explain any one method in detail. **10**

5. (a) Draw a neat circuit diagram and explain the working of an analog electronic voltmeter using FET bridge. **10**
   (b) Explain in brief the working of R.F. signal generator with the help of block diagram. **10**

6. (a) Explain need and working of any high frequency CRO with the help of neat diagram. **10**
   (b) Write short note on component testing using CRO. **10**

7. Write short note on any **three** of the following :– **20**
   (a) Single Phase Electrodynamometer Type Power Factor Meter
   (b) Moving Iron Instruments
   (c) Megger
   (d) Maxwell Bridge
   (e) Speed Control of DC Motor.

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