

Con. 3084-08.

(REVISED COURSE)

CO-9979

(3 Hours)

[Total Marks : 100

- N.B.** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions out of remaining **six** questions.
 (3) Assume **suitable** additional data if **necessary** and state them **clearly**.
 (4) Draw **neat** diagram and sketches.

1. Solve any **four (each 5 marks)** :—
 - (a) Explain the working of digital frequency meter.
 - (b) Explain good laboratory signal generator.
 - (c) Explain factor that causes error during Q measurement.
 - (d) Explain requirements of Pulse generator and different types of Pulses.
 - (e) What are the characteristic of Op-amp ?

2. Draw the functional block diagram of a general purpose C.R.O. Explain the working of each block in detail. What are the Lissajous Patterns related to C.R.O. ? How they are useful in measuring frequency and phase difference? State also the limitations of this method. 20

3. (a) What is a Q of a circuit ? Discuss the principle of operation of Q-meter and Impedance measurement using a Q meter. 10
 (b) Give the list of ADC types and explain SAR in DVM details. 10

4. (a) Draw a neat block diagram and explain the operation of Digital phase meter. State its advantages and limitations. 10
 (b) Explain, how an oscilloscope displays a signal ? 5
 (c) What property (or properties) of the oscilloscope governs its ability to reproduce a square wave most faithfully ? 5

5. (a) Draw the Wien Bridge oscillator circuit and derive an expression for its frequency. Explain the requirements of good audio frequency signal generator. 10
 (b) Explain Dual trace and Double beam CRO with block dia and waveform. 10

6. (a) Explain in details Digital storage oscilloscope and Mesh/phosphors storage oscilloscope. 10
 (b) Beat frequency oscillators and its applications. 5
 (c) Write the factor involved selection of Voltmeter. 5

7. Write short notes on any **two** :— 20
 - (a) CRT tube
 - (b) Wobblerscope
 - (c) Discuss in brief, 2-modulation in C.R.O.