

N.B. (1) Question No.1 is compulsory, answer any four from the remaining six questions.
(3) Explain with neat diagram wherever required.

1. (a) What are advantages of Electronic voltmeter over Conventional voltmeter? 5
 (b) How are Lissajous patterns used for frequency and phase measurement? 5
 (c) Explain each block of a generalized measurement system. 5
 (d) Find response of first order system to Ramp input. 5
2. (a) Explain the working of an Analog Phase meter. 10
 (b) Draw and explain digital frequency meter? When is period measurement preferred? 10
3. (a) Explain in detail working of a digital storage oscilloscope. What are its various modes of operation? 10
 (b) Explain the working of sweep generator in a CRO. 10
4. (a) Explain the working of a digital Multimeter. 10
 (b) Explain the working of Ramp type digital voltmeter. 10
5. (a) explain the working of Audio Frequency signal generator. 10
 (b) Draw and explain the working of a FET voltmeter. 10
6. (a) Explain Multi-channel Data Acquisition system. 10
 (b) Explain the LCD display system and the Touch screen Display system. 10
7. Write short notes on any three :- 20
 - (a) Requirement of a good Laboratory type signal generator
 - (b) Effect of Zeta (ζ) on Second order system
 - (c) Oscilloscope for Biomedical Measurement
 - (d) True RMS responding voltmeters.