

Electronic measuring Instruments

Con/2364-07.

(Library)

(REVISED COURSE)

(3 Hours)

ND-8306

[Total Marks : 100]

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions out of the remaining **six** questions.
 (3) **All** questions carry **equal** marks.

1. Attempt any **four** :

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|-----|-----------------------------------------------------------------------------------------------------------|----|
| (a) | What are the characteristics of op-amp ? | 5 |
| (b) | Discuss intensity modulation and velocity modulation in a CRO. | 5 |
| (c) | What are the important specifications of a digital voltmeter ? | 5 |
| (d) | Why delay lines are required in a CRO ? | 5 |
| (e) | State the requirements of a good laboratory type signal generator. | 5 |
| 2. | (a) Explain the functions of various controls on the front panel of a CRO. | 10 |
| | (b) What are lissajous patterns ? How are they used for measurement of frequency and phase angle ? | 10 |
| 3. | (a) Describe the working of successive approximation type DVM. | 10 |
| | (b) Discuss the impedance measurement using Q-meter. | 10 |
| 4. | (a) Explain the working of dual trace CRO and dual beam CRO. | 10 |
| | (b) Discuss the working of digital frequency meter and show how it is used for time interval measurement. | 10 |
| 5. | (a) Describe phase measurement by voltage addition method. | 10 |
| | (b) Explain the working of beat frequency oscillator and mention their application. | 10 |
| 6. | (a) Discuss the working of true rms reading and average reading electronic voltmeters. | 10 |
| | (b) Draw the functional block diagram of op-amp and explain its working as integrator and differentiator. | 10 |
| 7. | Write short notes on any two : | 20 |
| | (a) Dual slope integrating method | |
| | (b) FET voltmeter | |
| | (c) Storage oscilloscope. | |