

22331

21819

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

10

- (a) Define “error”.
- (b) Write the specifications of an analog multimeter.
- (c) State significance of Lissajous figure.
- (d) List static and dynamic characteristics of an instrument.
- (e) Sketch diagram of linear potentiometer.
- (f) State two applications of AC bridges.
- (g) List the applications of PMMC.

2. Attempt any THREE of the following :

12

- (a) Compare analog instruments and Digital Instruments.
- (b) Draw & explain block diagram of digital frequency meter.
- (c) Draw and explain the block diagram of function generator.
- (d) Explain with neat sketch the working principle of Maxwell bridge.

- 3. Attempt any THREE of the following : 12**
- (a) Explain with neat sketch the working of digital voltmeter.
 - (b) List the main components of CRO.
 - (c) Explain significance of ohmmeter in instrumentation system.
 - (d) Sketch labelled block diagram of logic analyser.
- 4. Attempt any THREE of the following : 12**
- (a) Sketch labelled diagram of successive approximation and give applications.
 - (b) Convert the PMMC movement into DC-voltmeter of the range 0 to 100 mV.
 - (c) Explain LCR-Meter with sketch.
 - (d) Explain with sketch procedure for calibration of given device.
 - (e) Determine resolution, sensitivity and accuracy of given digital display.
- 5. Attempt any TWO of the following : 12**
- (a) Draw the block diagram of DSO and List 4 applications of DSO.
 - (b) Sketch Lux meter and write steps to measure unknown resistance.
 - (c) Determine the smallest measureable change in the voltage of an analog voltmeter having range 0-200 V with resolution of .15% of full scale.
- 6. Attempt any TWO of the following : 12**
- (a) Sketch the diagram of Wheatstone bridge. Write procedure for measurement of unknown resistance.
 - (b) Explain frequency measurement using Lissajous pattern.
 - (c) Describe the working of Half wave rectifier type AC voltmeter.
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