M.E. Second Semester (Electrical & Elect.) (New-CGS)

13288 : Digital Instrumentation : 2 EEEME 1

P. Pages : 2

Time : Three Hours

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AW - 3841

Max. Marks : 80

Notes :
1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Diagrams and chemical equations should be given wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of slide rule logarithmic tables, Steam tables, Mollier's Chart, Drawing instrument, Thermodynamic table for moist air, Psychrometric Charts and Refrigeration charts is permitted.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) Compare various electrically erasable memory techniques. Also explain flash memory. **6**

b) Explain various types of Electrical Standards. **7**

OR

2. a) Explain **6**
i) Quantum Hall effect
ii) Josephson effect
iii) Von Klitzing constant

b) Draw and explain block diagram of a Processor based measurement system. **7**

3. a) Explain the details of ADC & its need. Also comment on its errors. **7**

b) Explain with block diagram of operation of a multichannel Data Acquisition system with multiplexing the output of sample/Hold circuits. **7**

OR

4. a) Discuss in detail the architecture of DAC based on Resistor Ladders. Also give the advantages and disadvantages for the same. **7**

b) Explain Sample/Hold amplifiers (SHA) with block diagram, with reference to input and output characteristics of SHA Explain, **7**
i) Aperture time
ii) Switching transient settling time
iii) Acquisition Time

5. a) What are the Waveform Parameters? How they are measured, explain any one with neat diagram. **6**

b) Explain the terms. **7**
i) Phosphor characteristics ii) Liquid Crystal Display

OR

6.	a)	Explain in detail the working principle of DSO. Give its applications.	6
	b)	Explain working of digital multimeter in detail.	7

SECTION - B

7.	a)	What do you mean by High Frequency measurements.	6
	b)	Draw and explain diagram of modulation analyzers and explain with application.	7

OR

8.	a)	What is signal generator. Also give details about its specifications.	6
	b)	Explain frequency measurement and frequency ratio measurement with reference to electronic counters.	7
9.	a)	Compare facilities, simultaneous timing and state analysis with respect to logic analyzers.	7
	b)	Explain operation, advantages, disadvantages, applications of FFT spectrum analyzers.	7

OR

10.	a)	Explain various controls employed in modern spectrum analyzers.	7
	b)	Explain three common techniques used to make frequency domain measurements.	7
11.	a)	Explain the SCPI instrument model	6
	b)	Describe in detail Automatic Test equipment for PCB.	7

OR

12.	a)	Explain in detail with diagram the interfacing of your devices with IEEE-488 BUS.	6
	b)	Explain in detail RS-232 interface.	7

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