M.E. Second Semester (Electrical & Elect) (New - CGS)
13288 : Digital Instrumentation : 2 EEEME 1

P. Pages : 2

Time : Three Hours

||||| ||| ||||| |||||
* 0 9 5 1 *

AU - 3401

Max. Marks : 80

Notes :
1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Diagrams and equations should be given wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of slide rule logarithmic tables, 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.

1.	a)	Explain in detail different types of electrical standards.	6
	b)	Draw and explain block diagram of a Processor based measurement system.	7

OR

2.	a)	What is error? Explain estimation and reduction or elimination of these errors.	6
	b)	Classify the digital displays. Explain in detail construction, working, advantages and disadvantages of gas Discharge plasma Displays.	7

3.	a)	Explain sample/Hold amplifiers (SHA's) with block diagram. With reference to input/output characteristics of SHA explain. i) Aperture time, ii) Switching transient settling time and iii) Acquisition time.	8
	b)	Explain parallel analog to digital converter. Give its advantages and disadvantages.	5

OR

4.	a)	Explain with a block diagram of operation of a multichannel Data Acquisition system with multiplexing the output of sample/Hold circuits	7
	b)	What is DAC? Explain variable Resistor network for the same.	6

5.	a)	Explain with neat diagram Automatic ranging and Automatic zeroing of a DMM.	7
	b)	Explain basic principle of signal display on CRO.	7

OR

6.	a)	What are the waveform parameters? How they are measured, explain any one with neat diagram.	8
	b)	Give and explain the specifications of digital multimeter.	6

7. a) Explain modulation domain analysers with neat diagram.   6

    b) Give and explain the specifications of signal generators.   7

                                            OR

8. a) How an electronic counter be used to measure.   7
        i)   Period mode
        ii) Ratio mode and
        iii) Time interval mode.

    b) Explain in detail High frequency measurements and down conversion techniques.   6

9. a) Explain the basic operation of Logic analysers and types of analysis.   6

    b) Explain the basic spectrum analyser using swept Receiver design with block diagram and   7
        amplitude Vs frequency signals.

                                            OR

10. a) With respect to logic analysers, explain.   7
        i)   Probing.
        ii) Clocking and
        iii) Triggering.

    b) Explain the operation, advantages, disadvantages, applications of FFT spectrum analyzer.   6

11. a) Explain in detail with diagram the interfacing of four devices with IEEE-488 bus.   7

    b) Explain the ADSL standard of digital telecommunication transmission systems   7
        measurement.

                                            OR

12 a) Explain in detail VLSI testing of any one system.   7

    b) Explain interface functions with GPIB devices.   7

                                    ★★★★★★ ★★★