

AU – 2878

Seventh Semester B. E. (Electronics Engineering) (CGS) Examination

DIGITAL INSTRUMENTATION

Paper – 7 XN 04

(USC – 10691)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

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- Note :** (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Illustrate your answer wherever necessary with the help of neat sketches.
(4) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) What is sensitivity and resolution of digital meter ? Explain advantages and disadvantages of digital instrument over analog instrument. 7
(b) Draw and explain logic state analyzer and its application. 7

OR

2. (a) Describe with the diagram the operation of successive approximation type digital voltmeter. 7
(b) With neat diagram, explain frequency selective wave analyzer. 7
3. (a) Elaborate talker, listener and controller type instruments interfaced with IEEE 488 Bus standard. Also state the example of each type of instrument. 7
(b) What is role of FDM and TDM in telemetry system ? Describe the digital telemetry system. 6

OR

4. (a) What is multitelemetry ? How could telemetry be used in medical field ? 7

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- (b) What is Bus standard ? Explain the GPIB standard with proper schematics. 6

5. Describe a PC based real time based instrumentation system in detail. 13

OR

6. (a) Explain major components of virtual instrumentation system. 7

- (b) What is role of Hardware and Software in virtual instruments ? Explain with suitable example. 6

7. (a) Explain active X-programming with example. 7

- (b) Create a VI that generates a ID array of random numbers and sort the array in ascending order. 7

OR

8. (a) What is formula node and math script node ? Explain the use of formula node. 7

- (b) State the various features of sequence structure. 7

9. (a) Explain operation of timers with suitable example. 7

- (b) Describe the term calibration and resolution. 6

OR

10. (a) What do you mean by sampling fundamentals ? Explain in detail. 7

- (b) List the various types of DAC. Explain any one in detail. 6

11. (a) Explain the DTE and DCE along with suitable diagram for single ended serial transmission over Rs 232 interface. 7

- (b) Explain the null modem connection related to cross over with RTS+DCD / DTR – CTS handshake. 6

OR

12. (a) What are the virtual instrument chain requirement ? Explain. 5
- (b) Explain the following related to GPIB
- (i) ACG : Addressed Command Group
 - (ii) UCG : Universal Command Group
 - (iii) SCG : Secondary Command Group
 - (iv) LAG/TAG : Listen/Talk Addressed Group. 8

