1194

Code : 15EC34T

Register Number | | | | | | | |

III Semester Diploma Examination, Nov./Dec. 2017

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

Time : 3 Hours | **| Max. Marks : 100**

Note : (i) Answer any **six** questions from **PART-A.** **(6 × 5 = 30** Marks)

(ii) Answer any **seven** full questions from **PART-B.** **(7 × 10 = 70** Marks)

PART-A

1. Define w.r.t. measurements : **5**
   (i) Speed of response
   (ii) Dynamic error
   (iii) Accuracy
   (iv) Fidelity
   (v) Resolution

2. List the criteria for selection of transducer. **5**

3. Explain the principle of PMMC meters. **5**

4. Discuss the concept of calibration of meters. **5**

5. List the features of spectrum analyzer. **5**

6. Explain the working of CRT with a neat sketch. **5**

7. Compare analog meter and digital meter. **5**

8. Describe with block diagram how time interval measurement can be done. **5**

9. Explain how grounding reduces interference in measuring instruments. **5**

PART-B

10. Illustrate the block diagram of generalized electronic measurement system. **10**

11. (a) Discuss Arithmetic Mean, Deviation from the Mean, Average Deviation, Standard Deviation and Variance used in statistically analysis measuments of instruments. **5**

    (b) Explain the principle of working of thermocouple. **5**

12. (a) Explain working principle of piezo-electric transducer. **5**

    (b) Write about proximity sensor. **5**

13. (a) Explain the pros and cons of electronic voltmeter. **5**

    (b) Write a short note on solid state voltmeter using op-amp. **5**

14. (a) Explain electrodynamometer with its construction and working principle. **5**

    (b) Explain series and shunt type ohmmeters. **5**

15. (a) List the applications of CRO. **5**

    (b) Explain D.S.O with the help of block diagram. **5**

16. (a) Explain different types of CRO probes. **5**

    (b) Describe standard RF signal generator. **5**

17. Show with block diagram how digital LCR meter is used for measurement. **10**

18. (a) Discuss with block diagram the working principle of digital frequency meter. **5**

    (b) State the pros and cons of digital instruments. **5**

19. Write about generalized trouble-shooting procedure for measuring instruments. **10**