1470

Code : 15EC-34T

Register Number | | | | | | | |

III Semester Diploma Examination, Nov./Dec. 2016

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

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

Note : (i) Answer any **six** question from Part-**A** ($5 \times 6 = 30$ marks)

(ii) Answer any **seven** full questions from Part-**B** ($7 \times 10 = 70$ marks)

PART – A

1. Compare the features of AC and DC bridges. **5**

2. List the factors for selection of a Transducer. **5**

3. List Pros and Cons of Electronic voltmeter. **5**

4. Explain : **5**

   (i) Voltmeter Sensitivity

   (ii) Load effect of voltmeter

5. List the features of standard RF signal generator. **5**

6. List the advantages and applications of Digital Storage Oscilloscope. **5**

7. Explain with block diagram Microprocessor based instruments. **5**

8. Describe successive approximation Digital voltmeter. **5**

9. Write short note on grounding and shielding. **5**

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PART – B

10. Explain how Wheatstone bridge is used for measurement of resistance and mention its applications. **10**

11. (a) Describe direct and indirect methods of measurements. **5**

    (b) Explain the working principle of capacitive transducer. **5**

12. (a) Sketch LVDT and explain the working principle. **5**

    (b) Write a note on PIR sensors. **5**

13. A basic d'Arsonval movement with internal resistance, R_m = 100 Ω and full scale deflection current I_{fsd} = 2mA, is to be converted into a multirange dc voltmeter with voltage range of 0–1 V, 10 V, 100 V and 250 V. Draw the necessary circuit arrangement and calculate the values of suitable multipliers. **10**

14. (a) Differentiate PMMC over Electrodynamometer. **5**

    (b) Describe DC Ammeter with extension of range. **5**

15. Illustrate with block diagram a typical function generator and list its applications. **10**

16. (a) List the features of Wave Analyser. **5**

    (b) List the advantages and applications of sampling oscilloscopes. **5**

17. Show how Decade counter is used in different modes as Electronic counter. **10**

18. (a) Discuss how is automatic polarity indication and automatic zeroing in Digital Instruments. **5**

    (b) List the features of IEEE488 GPIB. **5**

19. Write about precaution for instrument safety and instrument usage. **10**