CBCS SCHEME

USN | | | | | | | | | | |

15EC35

Third Semester B.E. Degree Examination, Dec.2023/Jan.2024
Electronic Instrumentation

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Describe different types of errors in measuring instruments. **(08 Marks)**

b. What is thermocouple? Explain different types of thermocouples. **(08 Marks)**

OR

2 a. Find the voltage reading and % error of each reading obtained with a voltmeter on i) 5V range ii) 10V range iii) 30V range, if the instrument has a 20KΩ/V sensitivity and it is connected across Rb of Fig.Q.2(a). **(08 Marks)**

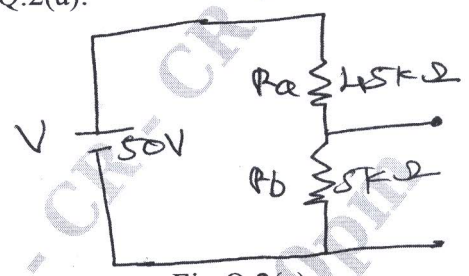

Fig.Q.2(a)

b. Explain principle operation of true RMS voltmeter. **(08 Marks)**

Module-2

3 a. Explain working of dual slope type DUM for voltage to time conversion. **(08 Marks)**

b. With diagram, explain the working of digital pH meter. **(08 Marks)**

OR

4 a. Discuss the working of microprocessor based ramp type DVM. **(08 Marks)**

b. Explain working of digital tachometer with diagram. **(08 Marks)**

Module-3

5 a. Describe basic principle of signal display (Function of Sweep generator). **(08 Marks)**

b. Explain the principle operation of AF sine and square wave generator. **(08 Marks)**

OR

6 a. With block diagram of oscilloscope explain function of each block. **(08 Marks)**

b. Explain the working principle of function generator. **(08 Marks)**

Module-4

7 a. Explain the working of phase-sensitive detector. **(08 Marks)**

b. Explain the operation of capacitance comparison bridge for measurement of unknown capacitance. **(08 Marks)**

OR

8 a. Explain the working of Maxwell's bridge for measurement of quality factor (Q). **(08 Marks)**

b. Discuss the principle operation of megger with diagram. **(08 Marks)**

Module-5

9 a. List the advantages of electrical transducer. **(08 Marks)**

b. Explain the working principle of resistance thermometer. **(08 Marks)**

OR

10 a. Explain the construction and working of LUDT with diagram. **(08 Marks)**

b. Discuss the operation of piezoelectrical transducer. **(08 Marks)**

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