B.Tech DEGREE EXAMINATION, OCTOBER/NOVEMBER 2022.

End Examinations

Sixth Semester

ECE

ELECTRONIC MEASUREMENT AND INSTRUMENTATION

(Academic Year 2021-22)

(RU19 Regulations)

(Regular)

Time : 3 Hours *Max. Marks : 70*

PART — A

(Compulsory question)

Answer the following. **(10 × 2 = 20 Marks)**

1. (a) Explain the importance of Ohmmeters.

(b) Explain the term Dynamic error in detail

(c) Distinguish between spectrum analyzer and harmonic distortion analyzer.

(d) Draw the Basic wave analyzer and explain its operation.

(e) Write a short notes on micro sensors.

(f) Mention the Sensor applications in non-destructive testing.

(g) Explain any one of the method for the measurement of humidity.

(h) Explain the significance of load cell in force measurement.

(i) Explain the different Advantages of Electrical Transducers in detail.

(j) List out difference between active and passive transducer in detail.

Turn Over

PART — B

Answer one Full question from each unit. (5 × 10 = 50 Marks)

All questions carry equal marks.

UNIT I

2. (a) Draw the sketch and explain the principle and operation of thermocouple type ammeter. (5)

(b) Illustrate the types of analog ammeter used for instrumentation. (5)

Or

3. (a) Describe the static and dynamic characteristics of measuring instruments. (5)

(b) How are basic instruments converted into higher range ammeter? Illustrate the types of analog ammeter used for instrumentation. (5)

UNIT II

4. (a) What is AF oscillators and explain its operation along with circuit diagram. (5)

(b) Draw the circuit diagram of Digital Fourier Analyzers and explain its operation. (5)

Or

5. (a) Write short notes on function generator in detail. (5)

(b) What is a random noise generator? Explain with a neat sketch. (5)

UNIT III

6. Explain how to interface the sensors with microprocessor and microcontroller. (10)

Or

7. (a) Write a short notes on Hall Effect Sensors (5)

(b) Describe Characteristics of RLC Sensors. (5)

UNIT IV

8. With neat sketch explain the basic block diagram of the counter in freqency-mode for measuring frequency. (10)

Or

9. (a) Explain the measurements of frequency by Wien's bridge. (5)

(b) Briefly explain about Programmable Resistors. (5)

UNIT V

10. (a) Explain the working of capacitive transducers. (5)

(b) What is Piezo-electric effect? Explain the operation of Piezo-electric transducer. (5)

Or

11. (a) Briefly explain the working principles and measurement of force by any two nonelectric techniques. (5)

(b) Explain the resistive position transducer along with circuit diagram. (5)
