Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50535

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.

Fourth Semester

Electrical and Electronics Engineering

EE 8403 – MEASUREMENTS AND INSTRUMENTATION

(Regulations 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Sensitivity of Measurement.

2. How is median calculated?

3. Differentiate Single and Three phase wattmeters.

4. Enumerate the significance of magnetic measurements in view of its applications.

5. Define Electrostatic interference

6. List the grounding techniques.

7. What are the main parts in CRO?

8. What is Digital sampling oscilloscope?

9. Define Hall effect.

10. Compare and contrast Active and Passive transducers.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the working principle of Dual slope Digital Voltmeter.

Or

(b) Enlist and Explain the different types of errors associated with measurements.

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12. (a) Describe how the iron loss is measured and the significance of B-H Curve.

Or

(b) Explain the working principle of instrument transformer with neat sketch.

13. (a) Explain the operation of Anderson Bridge to find unknown inductance.

Or

(b) Describe the functioning of Kelvin bridge and its extension.

14. (a) Sketch a block diagram showing the main components in a digital storage oscilloscope and explain the mode of operation of the instrument.

Or

(b) Describe the significance of Data loggers in Display device applications.

15. (a) Explain the working principle of Piezoelectric transducer with neat sketch.

Or

(b) Describe the elements of Data acquisition system with neat sketch.

PART C — (1 × 15 = 15 marks)

16. (a) Draw and describe the two — wattmeter method for star and delta connected system and discuss the effect of power factor on wattmeter readings.

Or

(b) Identify and describe the instrument used for measuring frequency and phase.

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