

BTEIBS404: Instrumentation System Components

Chapter 1

- 1) State and explain different types of standards.
- 2) Describe direct and indirect method of measurement.
- 3) Define the term
 1. repeatability
 2. Reproducibility
 3. accuracy
- 4) state different types of error in instruments explain in detail.
- 5) draw the block diagram of instrumentation system
- 6) state different error in analog measurement instruments.
- 7) what is static and dynamic characteristics of measuring instruments.
- 8) what is digital instruments give their application and advantages.
- 9) Define calibration with reference to electrical measuring system.
- 10) how calibration of wattmeter and energy meter is done.

Chapter 2

- 1) describe the construction working of PMMC
- 2) explain instrument transformer CT and PT.
- 3) how is the voltmeter calibrated with Dc potentiometer.
- 4) derive the torque equation of moving iron instrument.
- 5) describe how an ac potentiometer can be used for calibration of wattmeter.
- 6) explain working of MI induction type instrument.
- 7) explain working and construction of dynamo type instrument.
- 8) explain working principle of electrostatic instrument.
- 9) explain the induction type kWh meter.
- 10) explain calibration of energy meter.

Chapter 3

- 1) Explain wheatstone bridge and kelvins bridge.
- 2) Explain Kelvins double bridge method
- 3) Explain Maxwell and desauty bridge method.
- 4) Explain Anderson bridge schering bridge method.
- 5) What are the types of Ac and dc bridges.
- 6) What is the difference between AC and DC bridge.
- 7) Discuss in detail the various sources of error associated with the wheatstone bridge method.
- 8) Describe the balance condition for AC bridge with the help of necessary circuit diagram.
- 9) Discuss the limitations of wheatstone bridge and Maxwell bridge.
- 10) Explain Q factor and dissipation factor.

Chapter 4

- 1) What is ballastic galvanometer and state it's working and it's uses.
- 2) What is magnetic potentiometer and state it's working principle of potentiometer.
- 3) What is hall effect and derive the hall effect derivation.
- 4) What is a digital counter . explain types of counter in digital circuit.
- 5) Explain hobberts magnetic standard.
- 6) What is wave analyzer and explain types of wave analyzer.
- 7) What is frequency meter and state it's unit and explain types of frequency meter.
- 8) Explain core loss measurement spectrum.

Chapter 5

- 1) Define transducer and sensor and state the classification of transducer.
- 2) State working principle of capacitance and inductance type transducer.
- 3) State selection criteria of transducer.
- 4) Draw constructional diagram of LVDT and state it's working.
- 5) Draw and describe constructional diagram RVDT.
- 6) Explain thermocouple and RTD with its application.
- 7) Draw and explain the block diagram of digital voltmeter.
- 8) Compare CRO and DSO.
- 9) Write a note on photo-diode and photo-transistor.
- 10) Describe the working principle of piezo-electric transducer.
- 11) Draw and explain the block diagram of digital storage oscilloscope.
- 12) Explain the sketches the working principle of bourdon tube.