



B.E./B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2011

ELECTRICAL AND ELECTRONICS ENGINEERING

SEMESTER IV – (REGULATIONS 2004)

EE283 – MEASUREMENT AND INSTRUMENTATION

Time:3 hrs

Max Marks:100

Answer ALL Questions

Part A – (10×2=20)

1. Distinguish between accuracy and precision
2. How does environmental error occur?
3. State the function of differential voltmeter.
4. Mention the application of energy meter
5. Name any one AC bridge for measuring frequency
6. What is the advantage of Hay's bridge over Maxwell's inductance-capacitance bridge?
7. State the advantages of digital plotter.
8. What is meant by dot matrix display?
9. Give an example for analog transducer
10. Distinguish between active and passive transducers.

Part B – (5×16=80)

11. (i) Explain the terms static error, static correction, relative error and percentage relative error. (8)
- (ii) An ammeter reads 6.7A and the true value of current is 6.54 A. Determine the error and the correction for this instrument. (8)
12. a. Describe various methods for determination of B-H curve of a magnetic material using method of reversals and step by step method. (16)

OR

- b. Describe the constructional details and working of an electro-dynamometer type instrument. Derive the equation for deflection under AC operation if the meter is spring controlled. (16)
13. a. Describe the working of a Schering bridge. Derive the equations for capacitance and dissipation factor. (16)

OR

b. Explain how a Ratio Transformer bridge can be used for measurement of resistance, capacitance and phase angle. (16)

14.a. (i) Describe the principle of working and circuit diagram of a digital oscilloscope. (16)

OR

b. (i) Write short notes on LED and LCD (16)

15.a. Explain the construction and working principle of a LVDT. Also describe how the magnitude and direction of the displacement of core of LVDT are detected? (16)

OR

b. Describe various methods of analog to digital conversion. (16)