

Model Question Paper

Third Semester B.E.(CBCS) Examination Electrical and Electronic Measurement

Time:3Hrs

Max.Marks:100

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

Module-I

1. a. Define Sensitivity of the Wheatstone bridge with necessary diagram, reduce the Expression for sensitivity of bridge for S_B **(08 Marks)**
b. With a neat diagram derive the balancing equation for kelvin's double bridge **(06 Marks)**
c. Explain the sources and detectors used in AC bridges **(06 Marks)**
2. a. Explain the measurement of inductance using Anderson's Bridge with a neat diagram **(12 Marks)**
b. With a neat diagram explain the Megger used for measurement of resistance **(08 Marks)**

Module-II

3. a. Derive the Torque equation of single phase electro-dynamometer type watt meter **(06 Marks)**
b. Explain two wattmeter method of measurement of three phase power **(08 Marks)**
c. With a neat diagram explain the working of Weston frequency meter. **(06 Marks)**
4. a. Explain the operation of LPF type of wattmeter. **(06 Marks)**
b. The constant of energy meter is 800 revolutions /KWh. Calculate the number of revolutions made by it, when connected to a load carrying 100A at 230V & 0.8 p.f in 30 seconds. If it makes 110 revolutions in 30 seconds, find the percentage errors **(08 Marks)**
c. Explain the adjustments and calibration of single and three phase energy meters **(06 marks)**

Module-III

5. a. With the help of circuit & vector diagram explain Current transformer. **(08 Marks)**
b. Explain the Silsbee's method of testing CT. **(06 Marks)**
c. Write a short note on Shunt and Multipliers. **(06 Marks)**

6. a. A moving coil meter gives a full scale deflection with a current of 5mA. If the coil of the instrument has the resistance of 10Ω , how it can be adopted to work as i) Ammeter of range 0-10A ii) Voltmeter of range (0-10V) **(08 Marks)**
- b. List out the desirable features of ammeters and voltmeters **(06 Marks)**
- c. write a note on turns compensation used in instrument transformer.. **(06 Marks)**

Module-IV

7. a. With neat sketch describe true R.M.S responding voltmeter **(08 Marks)**
- b. With a neat block diagram explain Q-Meter. **(06 Marks)**
- c. Explain the working of electronic multimeter **(06 Marks)**
8. a. Mention the advantage of electronic instruments over conventional instruments **(06 Marks)**
- b. Briefly explain the essentials of electronic Instrumentation. **(06 Marks)**
- c. with a neat sketch explain the working of following:
- i) Integrating type DVM
 - ii) Ramp type DVM **(08 Marks)**

Module-V

9. a. Write a short note on the various display devices Viz. LED, LCD, Nixie tube **(08 Marks)**
- b. With a neat sketch explain Cathode ray tubes **(06 Marks)**
- c. Explain with a neat sketch explain Stripchart recorders **(06 Marks)**
10. a. Explain with a neat sketch, Electro Cardio Graph (ECG) **(08 Marks)**
- b. Write a note on.
1. Dot matrix Display ii) Bar matrix Display **(06 Marks)**
- c. Explain LVDT type recorders **(06 Marks)**