

## **ELECTRONICS INSTRUMENTATION & MEASUREMENT (EEC-403)**

### **Important Question**

1. What do you mean by term “accuracy” in instruments? Differentiate it with term “precision”.
2. Explain various causes for instrumental errors.
3. Explain the working of basic DC Ammeter with suitable diagram.
4. (e) Explain the operation of series OHM Meter with suitable diagram.
5. (f) The resistance of a circuit is found by measuring current flowing and the power fed into the circuit. Find the limiting error in the measurement of the resistance when the limiting error in the measurement of power and current are respectively  $\pm 1.5\%$  and  $\pm 1.0\%$ .
6. An  $820\Omega$  resistance with an accuracy of  $\pm 10\%$  carries a current of  $10\text{mA}$  the current was measured by an analog ammeter on a  $25\text{mA}$  range with an accuracy of  $\pm 2\%$  of full scale. Calculate the power dissipated in the resistor, and determine the accuracy of the result.
7. Derive the torque equation of the PMMC and also mention its source of error, merit & demerits.
8. Describe the working of AC Electronic Voltmeter with suitable diagram.
9. Describe the working of Digital Frequency Meter with neat sketch.
10. Explain the Digital Voltmeter Ramp Technique and also give its advantage and disadvantage.
11. Explain digital voltmeter with suitable diagram also write its merits and demerits in comparison to analog voltmeter.
12. Explain various specifications of digital multimeter (DMM) which are important while selecting for any application.
13. Draw the block diagram of dual slope type digital voltmeter and explain its working.
14. Explain the A.C. Electronic voltmeter.
15. Explain the digital frequency meter with suitable diagram.
16. Explain emitter follower voltmeter.
17. Explain Wheatstone bridge and derive the expression for bridge sensitivity.
18. Explain practical Q-meter with suitable diagram.
19. Explain the Maxwell and Hay inductance bridge with expression and also mention the formula for quality factor.
20. Explain the three different modes of operation of digital storage oscilloscope (DSO)
21. Explain the working of sampling oscilloscope with suitable diagram.
22. Define active and passive CRO probes along with their comparison in tabular format.
23. Explain dual beam CRO.
24. Derive the derivation for electrostatic deflection of moving electrons in CRO tubes.
25. Explain the CRO with suitable diagram.
26. Write short notes on X-Y recorders.
27. Write short notes on various types of plotters.
28. Explain all comparison methods.