

**Jaya Engineering College**  
**Department Electronics and Communication Engineering**  
**EC2351 MEASUREMENTS AND INSTRUMENTATION**  
**IMPORTANT QUESTIONS**

**PART B**

**UNIT1:**

1. Discuss basic characteristics of measuring device.
2. Explain with examples the different types of possible errors in measurement.
3. With neat diagram explain the construction and working principle of PMMC instrument.
4. Explain in detail about the Schering bridge?
5. Discuss in detail about the Maxwell's bridge?
6. Explain about the working principle of Hay's bridge?
7. Explain in detail about the Anderson's bridge?
8. Discuss in detail about the Wein bridge?
9. Explain about the working principle of Moving iron instruments?

**UNIT 2:**

10. Define and explain main parts of CRO.
11. With neat diagram explain the working principle of DSO?
12. Explain in detail about the dual beam oscilloscope?

13. Explain in detail about the sampling oscilloscope?
14. With neat diagram explain about the delayed time base oscilloscope.
15. Discuss in detail about the Q meter.
16. Explain about the working principle of True RMS meter?
17. Explain in detail about the vector voltmeter?
18. Explain the working principle of RF voltage and power measurements?

### **UNIT 3:**

19. Explain function generator with neat block diagram?
20. Explain pulse and square wave generator with diagram?
21. Explain the function of RF signal generator?
22. Discuss in detail about the sweep frequency generator?
23. Explain frequency synthesizer with neat diagram?
24. What is wave analyzer? Explain its types with neat sketch.
25. Explain in detail about harmonic distortion analyzer?
26. Explain spectrum analyzer and digital spectrum analyzer with neat block diagram?
27. Explain in detail about digital LCR meter?
28. Explain in detail about Vector network Analyzer?

### **UNIT 4:**

29. Compare digital instrument & digital instruments?
30. List different types of DVM's. Explain the working of Ramp type and successive approximation type.
31. Explain the operation of servo potentiometric and the dual slope integrating type?
32. Draw the schematic of DMM and explain its working. Also bring out its advantage over analog multimeter.
33. Draw and explain the block diagram of frequency counter?
34. Explain about the measurement of frequency and time interval with frequency range?

- 35.** Explain in detail about the extension of frequency range?
- 36.** Explain briefly about automation in digital instruments?
- 37.** With a neat block diagram explain fully automatic digital instrument.
- 38.** Explain in detail about the computer controlled test system?
- 39.** Explain in detail about architecture of virtual instruments.

**UNIT 5:**

- 40.** Explain in detail the elements of digital data acquisition system.
- 41.** Explain in detail about interfacing of transducers.
- 42.** Write a short note on Multiplexers.
- 43.** Explain in detail about data loggers?
- 44.** Draw the functional block diagram and explain the fiber optic measurements for power and system loss.
- 45.** Explain about the computer controlled instrumentation and its function?
- 46.** Write short notes on IEEE 488 bus.