**DEPT. OF ELECTRONICS & TELECOMMUNICATION ENGINEERING**
**GOVERNMENT POLYTECHNIC, BALASORE**
**QUESTION BANK**
**ON**
**TH4- ELECTRONICS MEASUREMENT & INSTRUMENTATION**

**SEMESTER & BRANCH : – 3RD SEM, E & TC ENGINEERING**

## SHORT QUESTIONS

1. List different static characteristics
2. Define the term resolution
3. What are limiting error ? What is the significance of limiting errors?
4. How is accuracy expressed.
5. List out dynamic characteristics of measuring instrument.
6. Differentiate between indicating and integrating instruments?
7. What are the utility of controlling torque ?
8. An ammeter having a range of 0-25A having an internal resistance of 0.1Ω is to be used to measure up to a range of 0-120A.Calculate the value of resistance require ?
9. State the effects of using a voltmeter with low sensitivity.
10. State the advantages of a DVM over an analog meter.
11. Define Q-factor and resonance.
12. List the major components of CRT.
13. State the function of attenuator in CRO.
14. Define transducer
15. What is the difference between Primary & Secondary transducer.
16. Define a strain Gauge.
17. List different types of temperature transducer.
18. State the disadvantages of PMMC instruments
19. State the advantages of Moving iron type instruments**.**
20. Name the methods used for medium resistance measurement
21. Name the bridge circuits used for the m/s of self inductance
22. Name the bridge circuits used for the m/s of capacitance.
23. Name the sources of errors in ac bridge m/s.
24. State the disadvantages of Hay's bridge
25. State the use of Wein bridge.
26. How will you select the transducers for our need?
27. Mention the Advantages of Electrical Transducer
28. State the principle of variable inductance transducers

## LONG QUESTIONS

1. Define the term resolution, sensitivity, accuracy, precision & errors.
2. Differentiate between static and dynamic characteristic of an instrument.
3. Explain systematic error in detail. How can it be minimized.

4. State the advantages of LCD display over LED display.
5. State the difference between Moving iron and moving coil instrument.
6. Draw & explain the construction of PMMC instrument
7. Explain with a diagram how PMMC can be used as an ameter.
8. What are the requirement of a shunt? How can a basic ammeter be converted into a multi range ammeter.
9. Explain the operation of a full wave rectifier type ac voltmeter.
10. Explain with a diagram how a multirange ac voltmeter can be constructed using PMMC.
11. Explain the operation of Ramp type digital volt meter.
12. The lowest range on a 3-1/2 digit multi meter is 10mV full scale. Determine the sensitivity of the meter.
13. Describe with a diagram the operation of a Q- meter . List the factor that causes error in Q-meter.
14. Explain the working principle of dual trace CRO.
15. Compare dual beam & dual trace CRO
16. Explain how frequency can be measured by a CRO using lissajous figure.
17. Explain the operating principle of a function generator.
18. A 100 μA meter movement with an internal resistance of 500 Ω is to be used in a 0-100mA Ammeter. Find the value of the required shunt.
19. Draw the circuit diagram and obtain balance conditions for Hay's bridge. Write down its advantages and disadvantages.
20. Draw the circuit diagram and obtain balance condition for Wheatstone bridge. Calculate the value of Rx in a Wheatstone bridge if R1= 400 Ω , R2= 5k Ω ,R3=3 k Ω
21. Explain with neat diagram working of Moving iron instrument , its advantages and disadvantages.
22. An ammeter measures a full scale current of 10OA produces a full scale error of 5%. Find the error if the ammeter reads 50 A.
23. Explain the operation of Digital storage oscilloscope with a neat block diagram. State its applications
24. Differentiate between wave analyser and spectrum analyser
25. Compare RTD with thermistor