Electrical And Electronic Measurement (22325)

Class Test I

1. _____ is the act or result of a quantitative comparison between an unknown quantity & a predefined standard quantity.
    - **a) Measurement**
    - b) Calibration
    - c) Instrument
    - d) Characteristics.
2. Which is the type of standard??
    - a) Primary
    - b) Secondary
    - c) Working
    - **d) All of these**
3. The standard with highest possible accuracy
    - a) Primary
    - b) Secondary
    - **c) International**
    - d) Working
4. The instruments which are used to measure the quantity under measurement indirectly ie.in terms of deflection, degrees.
    - a) Primary
    - **b) Absolute**
    - c) Secondary
    - d) None of these
2. The absolute instrument is
    - a) Voltmeter
    - b) Ammeter
    - c) Wattmeter
    - **d) Galvanometer**
3. The instruments which are used to measure the quantity under measurement directly.
    - a) Primary
    - b) Absolute
    - **c) Secondary**
    - d) None of these
4. The secondary instruments are
    - a) Voltmeter
    - b) Ammeter
    - c) Wattmeter
    - **d) All of these**

5. The Instruments which reads with the help of pointer and calibrated scale.
    a) Indicating
    b) Recording
    c) Integrated
    d) None of above
6. The Instruments which continuously record the quantity under measurement over a some period
    a) Indicating
    b) Recording
    c) Integrated
    d) None of above
7. The instruments are used to collect the data for specific duration of time are called as integrating type instruments.
    a) Indicating
    b) Recording
    c) Integrated
    d) None of above
8. The integrating type of instrument is
    a) Voltmeter
    b) Ammeter
    c) Wattmeter
    d) Energymeter
9. The indicating type of instrument is
    a) Voltmeter
    b) Energymeter
    c) None of above
    d) Both a) and b)
10. The Degree Closeness with which an instrument reading approaches the true value.
    a) Accuracy
    b) Precision
    c) Resolution
    d) Drift
11. The degree of Measure of Consistency or Repeatability of Measurement under a successive set of readings.
    a) Accuracy
    b) Precision
    c) Resolution
    d) Reproducibility

12. The closeness of output readings when the same input is applied repetitively over a short period of time.

    a) Repeatability
    b) Reproducibility
    c) Resolution
    d) Drift

13. It describes the closeness of output reading for same input when there are changes in method of measurement, observer, measuring instrument, location etc.
    a) Repeatability
    b) Reproducibility
    c) Resolution
    d) Drift
14. It is smallest measurable I/P changes which can be detected by the instrument.
    a) Accuracy
    b) Precision
    c) Resolution
    d) Drift
15. The errors that are caused by deviations in the performance of the measuring instrument that occur after calibration.
    a) Error
    b) Drift
    c) Dead zone
    d) None of above
16. It is defined as the largest change of input quantity for which there is no output of the instrument.
    a) Error
    b) Drift
    c) Dead zone
    d) Resolution
17. It is defined as the difference between True value and Measured value
    a) Error
    b) Drift
    c) Dead zone
    d) Resolution
18. The time required for Instrument to change its output if an input is applied.
    a) Speed of response
    b) Dynamic error
    c) Lag
    d) Fidelity
19. The difference between the true value and measured value with zero static error.
    a) Speed of response
    b) Dynamic error
    c) Lag
    d) Fidelity
20. It is defined as a time difference between input and output of instrument.
    a) Speed of response
    b) Dynamic error
    c) Lag
    d) Fidelity
21. The degree to which an instrument indicates the changes in the measured variable without dynamic error (faithful reproduction).

a) Speed of response
b) Dynamic error
c) Lag
d) Fidelity

22. The type of systematic error is
    a) Instrumental
    b) Observational
    c) Environmental
    d) All above
23. The error that occurs due to friction in bearings of various moving components irregular spring tensions stretching of the spring or redaction in tension due to improper handling or overloading of the instrument.
    a) Instrumental
    b) Observational
    c) Environmental
    d) None of above
24. The error that occurs due to the effects of change in temperature humidity barometric pressure or of magnetic or electrostatic fields.
    a) Instrumental
    b) Observational
    c) Environmental
    d) None of above
25. The errors that may be introduced due to parallax error while reading a meter improper scale selection.
    a) Instrumental
    b) Observational
    c) Environmental
    d) None of above
26. These errors are due to unknown causes & occur invariably.
    a) Instrumental
    b) Gross errors
    c) Systematic errors
    d) Random errors
27. The process of estimating the value of a quantity by comparing it with a standard quantity.
    a) Measurement
    b) Measuring instrument
    c) Calibration
    d) Standards
28. The need for Calibration is
    a) To ensure readings from an instrument are consistent with other measurements.
    b) To determine the accuracy of the instrument readings.

c) To establish the reliability of the instrument i.e. that it can be trusted.

d) All of above

29. Operating torques in analogue instruments are
    a) deflecting and control
    b) deflecting and damping
    c) deflecting, control and damping
    d) vibration and balancing
30. A _____ device prevents the oscillation of the moving system and enables the latter to reach its final position quickly
    a) Deflecting
    b) Controlling
    c) Damping
    d) any of the above
31. The torque that is required to move the pointer on calibrated scale is
    a) Deflecting
    b) Controlling
    c) Damping
    d) any of the above
32. The torque that is required to control the pointer on calibrated scale
    a) Deflecting
    b) Controlling
    c) Damping
    d) any of the above
33. An ammeter is a
    a) Secondary Instrument
    b) Absolute Instrument
    c) Recording Instrument
    d) Integrating Instrument
34. The controlling torque is
    a) Equal and in same direction as of deflecting torque
    b) Equal and in opposite direction of deflecting torque
    c) Equal and in same direction as of damping torque
    d) Equal and in opposite direction of damping torque
35. **PMMC is**
    a) Permanent magnet moving core
    b) Permanent magnet moving coil
    c) Pole magnet moving coil
    d) Permanent magnet coil
36. In PMMC instrument, the magnet field is developed by using

a) **Permanent Magnets**
b) Electromagnets
c) Both a) and b)
d) None of above

37. In PMMC instrument, the deflecting torque is given by
    a) **Td=NBIL * 2r**
    b) Td=NBI * 2r
    c) Td=NBIL * r
    d) Td=NBI * R
38. In PMMC instrument, the controlling Torque is given by
    a) **Kc * θ**
    b) Kc * θ^2
    c) Kd * θ
    d) Kd * θ^2
39. In any instrument, the pointer shows steady reading when
    a) Td > Tc
    b) Td < Tc
    c) **Td = Tc**
    d) None of Above
40. The scale of PMMC instrument is
    a) **Uniform**
    b) Non-Uniform
    c) Cramped at the lower ends
    d) Crowded in the middle
41. The basic PMMC movement is often called D'Arsonval movement is used to measure:
    a) **DC only**
    b) AC only
    c) Both DC & AC
    d) None of the above
42. In measuring instruments, spiral springs are provided to
    a) Lead current
    b) **Produce controlling torque**
    c) Produce damping torque
    d) Lead current and produce controlling torque
43. In Moving iron instrument, the basic principle of _____ is used.
    a) Faradays Law of Electromagnetic Induction
    b) **Principle of Force of Attraction or Force of Repulsion**
    c) Induction Principle
    d) Electrostatic Principle
44. In Repulsion Type MI instrument, the number of Iron Pieces used is
    a) One

b) Two

c) Three

d) Zero

45. In Attraction Type MI instrument, the number of Iron Pieces used is

a) One

b) Two

c) Three

d) Zero

46. MI instrument can be used for the measurement of

a) AC Only

b) DC Only

c) AC and DC

d) None of Above

47. The scale of MI Instrument is

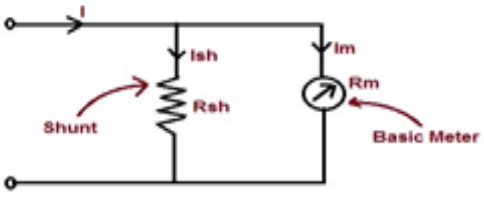
a) Uniform

b) Non-Uniform

c) Cramped at the lower ends

d) Crowded in the middle

48. The circuit shown below is a



a) Basic Voltmeter

b) Basic Wattmeter

c) Basic Ammeter

d) All of Above

49. The equation for Shunt Resistance is

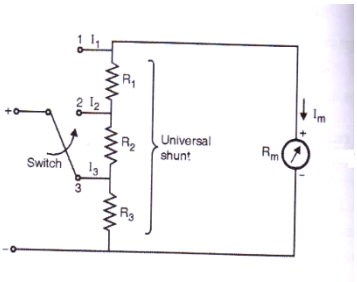
a) Rsh= $\frac{Rm}{\frac{I}{Im}-I}$

b) Rsh= $\frac{Rm}{\frac{Im}{I}-I}$

c) Rsh= $\frac{Rm}{\frac{I}{Im}-1}$

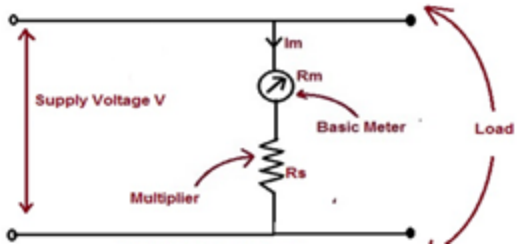
d) Rsh= $\frac{Rm}{\frac{Im}{I}-1}$

50. The circuit shown below is a



a) Practical Voltmeter
b) Practical Ammeter
c) Practical Wattmeter
d) None of Above

51. The circuit shown below is a



a) Basic Voltmeter
b) Multirange Voltmeter
c) Basic Ammeter
d) Multirange Ammeter

52. The equation for Series resistance is

a) $\frac{V}{i} - 1$

b) $\frac{i}{V}$ - 1

c) $\frac{V}{i}$ - Rm

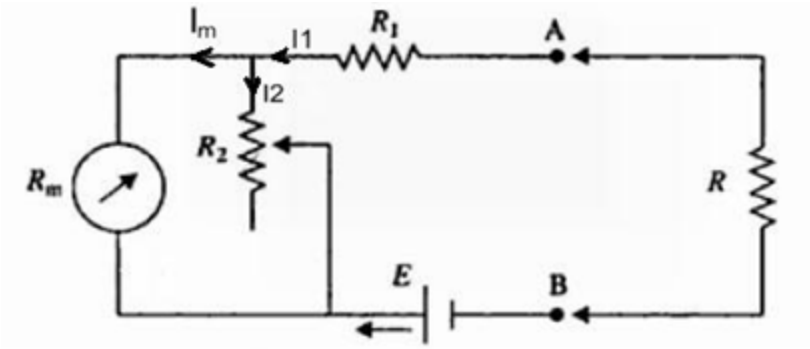
d) $\frac{i}{V}$ - Rm

53. In which Ohmmeter the meter is connected in parallel to the resistance which is to be measured.
a) Series type Ohmmeter
b) Shunt Type Ohmmeter
c) Both
d) None of Above

54. In which Ohmmeter the meter is connected in series to the resistance which is to be measured.
a) Series type Ohmmeter
b) Shunt Type Ohmmeter

c) Both
d) None of Above

55. The given circuit is a



a) Series type Ohmmeter
b) Shunt Type Ohmmeter
c) Both
d) None of Above

56. The type of Moving Iron Instrument is
a) Attraction Type
b) Repulsion Type
c) Both a) and b)
d) None of Above

57. A moving coil instrument has an internal resistance of 10 Ω and full scale deflection of 40 mA. The shunt resistance required to convert this instrument for use as an ammeter of range of 0 to 2A is:
a) 0.1021 Ω
b) 0.2041 Ω
c) 0.2561 Ω
d) 0.4210 Ω

58. A moving coil instrument has a internal resistance of 20 Ω and a full scale deflection of 100mA. The value of series resistor required to measure a voltage of 400V is,
a) 3980m Ω
b) 3.980M Ω
c) 3890 Ω
d) 3980 Ω

59. Clamp meter is used for the measurement of
a) Large Alternating current
b) Small Alternating Current
c) Small Direct Current
d) Large Direct current

60. Clamp meter uses a _____ for its measurement
a) Potential Transformer

b) Current Transformer

c) Series Resistor

d) Shunt Resistor