Q. The fact that how closely the instrument reading follows the measured variables is termed as

A. Threshold sensitivity

B. Fidelity

Technical Classes

C. Precision

D. Accuracy

E. Hysteresis

Answer» **B.** Fidelity

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E. Hysteresis

Answer» **B.** Fidelity

Due to which one of the following reasons bearings of PMMC instrument are made of Jewel ?

(a) To avoid wear and tear of the moving system.

Technical Classes

(b) To provide a small support.

(c) It can be easily replaced.

(d) To make the system robust.

Answer: (a) To avoid wear and tear of the moving system.

. Eddy current damping cannot be used for moving iron instruments because

(a) weight of the instrument will increase.

(b) size of the instrument will increase.

(c) presence of permanent magnet will distort the magnetic field produced by the instrument and hence will affect its readings.

Technical Classes

(d) eddy currents will pass through the iron thereby cause losses.

Answer: (c) presence of permanent magnet will distort the magnetic field produced by the instrument and hence will affect its readings.

. If the instrument has square law response, it can be used for the measurement of

(a) ac only.

(b) both ac and dc.

(c) dc only.

(d) none of the above.

Technical Classes

Answer: (b) both ac and dc.

. Which one of the following statements is correct ? Spiral springs are used in instruments to

(a) provide controlling torque.

(b) provide damping torque.

(c) lead the current to moving coil as well as to provide the controlling torque.

(d) provide linear deflection.

Technical Classes

Answer: (c) lead the current to moving coil as well as to provide the controlling torque.

. A moving coil galvanometer is made into a dc ammeter by connecting

(a) a low resistance across the meter.

(b) a high resistance in series with the meter.

Technical Classes

(c) a pure inductance across the meter.

(d) a capacitor in series with the meter.

Answer: (a) a low resistance across the meter.

. A very accurate voltmeter gives inaccurate reading when used for measuring voltage across a low resistance because

(a) the meter sensitivity is too low.

Technical Classes

(b) the meter sensitivity is too high.

(c) the voltmeter is taking too low current.

(d) the higher scale has been selected.

Answer: (a) the meter sensitivity is too low.

. Why is damping of a ballistic galvanometer kept small ?

(a) To get minimum overshoot.

(b) To make the system critically damped.

Technical Classes

(c) To make the system ocsiliatory.

(d) To get first deflection large.

Answer: (d) To get first deflection large.

. Hysteresis error, in moving iron instruments, may be reduced by using

(a) mumetal or permalloy.

(b) stainless steel.

Technical Classes

(c) silver coating.

(d) high speed steel.

Answer: (a) mumetal or permalloy.

. . An advantage of a PMMC instrument is that it is

(a) free from friction error.

(b) has high (torque/weight of the moving parts) ratio.

(c) has low (torque/weight of the moving parts) ratio.

Technical Classes

(d) can be used on both ac and dc.

Answer: (b) has high (torque/weight of the moving parts) ratio.

. In an electrodynamometer type instrument an astatic movement is provided in order to

(a) eliminate error owing to stray magnetic fields.

(b) provide damping torque.

Technical Classes

(c) increase the instrument operating torque.

(d) eliminate temperature error.

Answer: (a) eliminate error owing to stray magnetic fields.

Error due to hysteresis is predominant in

(a) moving coil instruments.

(b) moving iron instruments.

Technical Classes

(c) hot-wire instruments.

(d) electrodynamometer instruments.

Answer: (b) moving iron instruments.

A moving iron ammeter coil has few turns of thick wire in order to have:

a) High sensitivity
b) Effective damping
c) Low resistance and large current carrying capacity
d) Large scale

Answer

C

Which of the set of torques is provided in deflection galvanometer:

a) Deflection and controlling
b) Controlling and damping
c) Deflecting and damping
d) Deflecting, controlling and damping

Technical Classes

Answer

D

Which of the following is not an absolute instrument:

a) Tangent galvanometer
b) Rayleigh current balance
c) D'Arsonval galvanometer
d) Absolute electrometer

Answer

C

Voltmeter should be of very high resistance so that:

a) Its range is high
b) Its accuracy is high
c) It may draw current minimum possible
d) Its sensitivity is high

Answer

C

The internal resistance for milli ammeter must be very low for:

a)High sensitivity
b) High accuracy
c) Maximum voltage drop across the meter
d) Minimum voltage drop across the meter

Technical Classes

Answer

D

Swamping of resistance is used to compensate error due to:

a) Stray magnetic field
b) Temperature variations
c) Large supply variations
d) None of the above

Answer

B

8.An instrument that is capable of measuring only dc is:

a) Moving coil
b) Moving iron
c) Thermo couple
d) None of the above

Answer

A

9. Maxwell-Wien bridge is used to measure:

a) Inductance
b) Capacitance
c) Dielectric loss
d) Frequency

Technical Classes

Answer

A

10.A ballistic galvanometer is used to measure:

a) Charge
b) Current
c) Voltage
d) Frequency

Answer

A

8. Electrostatic instruments are mainly employed to measure:

a) Heavy currents
b) Low currents
c) Low voltages
d) High voltages

Answer

D

9. Uniformity in the scale of an ammeter indicates that it is:

a) Rectifier type
b) PMMC type
c) Moving iron type
d) Dynamo-meter type

Answer

B

Technical Classes

10. A Dynamometer type wattmeter responds to the:

a) Average value of the active power
b) Average value of the reactive power
c) Peak value of the active power
d) Peak value of the reactive power

Answer

A

11. Anderson bridge is used to measure of:

a) Inductance
b) Capacitance
c) Time period
d) Resistance and capacitance

Answer

A

B

3. The damping torque must operate only when the moving system of the indicating instrument is:

a) Actually moving
b) Stationary
c) Just starting to move
d) Near its full deflection

Answer

A

4. If a voltmeter is connected, like an ammeter in series to the load:

a) The measurement reading will be too high
b) Almost no current will flow in the circuit
c) The meter will burn
d) An instantaneously high current will flow

Technical Classes

Answer

B

5. Preferred material for permanent magnet is:

a) Stainless steel
b) Alnico
c) Tungsten steel
d) Soft iron

Answer

. Which one of the following instruments is commonly used to measure primary current of a transformer connected to mains ?

(a) Electrostatic meter.

Technical Classes

(b) Current transformer.

(c) Moving coil type meter.

(d) Moving iron meter.

Answer: (d) Moving iron meter.

Which of the following meters does not exhibit square law response?

(a) Moving coil

(b) Moving iron.

Technical Classes

(c) Electrodynamometer.

(d) Hot wire instrument.

Answer: (a) Moving coil

. **In a dynamometer type moving coil instrument a swamping resistance is provided in order to**

(a) control the deflecting torque.

(b) reduce the bulk of the moving system.

(c) reduce the current flowing through the moving coil.

Technical Classes

(d) provide equal time constant for moving coil and fixed coil, when used for ac measurement.

Answer: (d) provide equal time constant for moving coil and fixed coil, when used for ac measurement.

Rectifier moving coil instruments respond to

(a) peak value, irrespective of the nature of the waveform.

(b) average value, for all waveforms.

(c) rms value for all waveforms.

Technical Classes

(d) rms value, for symmetrical square waveforms.

Answer: (b) average value, for all waveforms.

The disadvantage of PMMC instrument is

(a) high power consumption.

(b) high cost relative to moving iron instruments.

(c) low torque/weight ratio.

Technical Classes

(d) absence of effective and efficient eddy current damping.

Answer: (b) high cost relative to moving iron instruments.

Moving iron and PMMC instruments can be distinguished from each other by looking at

(a) pointer.

(b) terminal size.

(c) scale.

(d) scale range.

Technical Classes

Answer: (c) scale.

. The term artificial aging in instrument is associated with

(a) springs.

(b) permanent magnets.

Technical Classes

(c) controlling torques.

(d) damping.

Answer: (b) permanent magnets.

. One of the control springs of a permanent magnet moving coil ammeter is broken. If connected in a circuit, the meter would read

(a) zero.

Technical Classes

(b) half the correct value of the current.

(c) twice the correct value of the current.

(d) an indefinite figure.

Answer: (a) zero.

The moving iron instruments

(a) indicate the same values of measurand for both ascending and descending values.

(b) indicate higher value of measurand for descending values.

(c) indicate lower value of measurand for ascending values.

Technical Classes

(d) may indicate any of the higher or lower value of measurand for ascending or descending values.

Answer: (b) indicate higher value of measurand for descending values.

. ` **The response of a galvanometer is independent of its**

(a) controlling torque.

(b) number of turns.

Technical Classes

(c) circuit resistance.

(d) none of these.

Answer: (c) circuit resistance.

What is the 'swamping' resistance which is connected in series with the working coil of a voltmeter to drastically reduce the error in measurement caused due to variation in temperature; made of ?

Technical Classes

(a) Constantan.

(b) Eureka.

(c) Manganin.

(d) Nichrome.

Answer: (c) Manganin.

· For a sensitive galvanometer, the type of support used is

(a) suspension.

(b) taut suspension.

Technical Classes

(c) unipivot suspension.

(d) none of these.

Answer: (a) suspension.

The most suitable material for use as spring material for most of the applications, except in low resistance instruments, is

(a) platinum silver.

Technical Classes

(b) phosphor-bronze.

(c) silicon bronze.

(d) hard-rolled silver.

Answer: (b) phosphor-bronze.

. **The damping torque must operate only when the moving system of the indicating instrument is**

(a) actually moving.

(b) stationary.

Technical Classes

(c) just starting to move.

(d) near its full deflection.

Answer: (a) actually moving.

In eddy current damping systems, the disc employed should be of

(a) conducting and magnetic material.

(b) conducting but nonmagnetic material.

(c) magnetic but non-conducting material.

Technical Classes

(d) non-conducting and nonmagnetic material.

Answer: (b) conducting but nonmagnetic material.

In a series-type ohmmeter

A. zero marking is on the left-hand side

B. zero marking is at the centre

C. zero marking is on the right-hand side

D. zero marking may be either on left or right-hand side

View Answer

C. zero marking is on the right-hand side

Technical Classes

. In series type ohmmeters, zero adjustment should be done by

A. changing the shunt resistance across the meter movement

B. changing the series resistance

C. changing the series and the shunt resistance

D. changing the battery voltage

View Answer

A. changing the shunt resistance **across the** meter movement

I. series type ohmmeters, zero adjustment should be done by

A. changing the shunt resistance across the meter movement

B. changing the series resistance

C. changing the series and the shunt resistance

D. changing the battery voltage

View Answer

A. changing the shunt resistance across the meter movement

Technical Classes

Screw adjustments are preferred over shunt resistance adjustments for zero calibration in ohmmeters because

A. the former method is less costly

B. the former method does not disturb the scale calibration

C. the former method does not disturb the meter magnetic field

D. all of the above

View Answer

B. the former method does not disturb the scale calibration

2 High resistances using the voltmeter–ammeter method should be measured with

A. voltmeter connected to the source side

B. ammeter connected to the source side

C. any of the two connections

D. readings are to be taken by interchanging ammeter and voltmeter positions

View Answer

A. voltmeter connected to the source side

Technical Classes

. Low resistances using the voltmeter–ammeter method should be measured with

A. voltmeter connected to the source side

B. ammeter connected to the source side

C. any of the two connections

D. readings are to be taken by interchanging ammeter and voltmeter positions

View Answer

B. ammeter connected to the source side

. High resistances are provided with a guard terminal.This guard terminal is used to :

A. Bypass the leakage current

B. Guard the resistance against stray electrostatic fields

C. Guard the resistance against overloads

D. None of the above.

View Answer

A. Bypass the leakage current

, When measuring insulation resistance of cables using d.c sources, the galvanometer used should be initially short circuited because .

Technical Classes

A. Cables have a low value of initial resistance

B. Cables have a high value of capacitance which draws high value of charging current

C. Cables have a low value of capacitance which draws high value of charging current

D. None of the above.

View Answer

B. Cables have a high value of capacitance which draws high value of charging current