

Instruments

(1) Instrument is a device for determining

- (a) the magnitude of a quantity
- (b) the physics of a variable
- (c) either of the above
- (d) both (a) and (b)

(2) Electronic instruments are preferred because they have

- (a) no indicating part
- (b) low resistance in parallel circuit
- (c) very fast response
- (d) high resistance in series circuit
- (e) no passive elements.

(3) A DC wattmeter essentially consist of

- (a) two ammeters
- (b) two voltmeters
- (c) a voltmeter and an ammeter
- (d) a current and potential transformer

(4) Decibel is a unit of

- (a) power
- (b) impedance
- (c) frequency

(d) power ratio

(5) A dc voltmeter may be used directly to measure

(a) frequency

(b) polarity

(c) power factor

(d) power

(6) An accurate voltmeter must have an internal impedance of

(a) very low value

(b) low value

(c) medium value

(d) very high value

(7) The insulation resistance of a transformer winding can be easily measured with

(a) Wheatstone bridge

(b) megger

(c) Kelvin bridge

(d) voltmeter

(8) A 100 V voltmeter has full-scale accuracy of 5%. At its reading of 50 V it will give an error of

(a) 10%

(b) 5%

(c) 2.5%

(d) 1.25%

(9) You are required to check the p. f. of an electric load. No p.f. meter is available. You would use:

- (a) a wattmeter
- (b) a ammeter, a voltmeter and a wattmeter
- (c) a voltmeter and a ammeter
- (d) a kWh meter

(10) The resistance of a field coil may be correctly measured by using

- (a) a voltmeter and an ammeter
- (b) Schering bridge
- (c) a Kelvin double bridge
- (d) a Maxwell bridge

(11) An analog instrument has output

- (a) Pulsating in nature
- (b) Sinusoidal in nature
- (c) Which is continuous function of time and bears a constant relation to its input
- (d) Independent of the input quantity

(12) Basic charge measuring instrument is

- (a) Duddel's oscillograph
- (b) Cathode ray oscillograph
- (c) Vibration Galvanometer
- (d) Bailastic Galvanometer
- (e) Battery Charging equipment

(13) A.C. voltage can be measured (using a d.c. instrument) as a value obtained

(a) by subtracting the d.c. reading from it's a.c. reading.

(b) Using the output function of the multimeter

(c) By using a suitable inductor in series with it

(d) By using a parallel capacitor with it

(e) None of the above

(14) A moving coil permanent magnet ammeter can be used to measure

(a) D. C. current only

(b) A. C. current only

(c) A. C. and D. C. currents

(d) voltage by incorporating a shunt resistance

(e) none of these

(15) Select the wrong statement

(a) the internal resistance of the voltmeter must be high

(b) the internal resistance of ammeter must be low

(c) the poor overload capacity is the main disadvantage of hot wires instrument

(d) the check continuity with multimeter, the highest range should be used.

(e) In moving iron voltmeter, frequency compensation is achieved by connecting a capacitor across its fixed coil.

(16) Which of the following instrument is suitable for measuring both a.c. and d.c.

quantities.

(a) permanent magnet moving coil ammeter.

(b) Induction type ammeter.

(c) Quadrant electrometer.

(d) Moving iron repulsion type ammeter.

(e) Moving iron attraction type voltmeter.

(17) Swamping resistance is used in moving coil instruments to reduce error due to

(a) thermal EMF

(b) temperature

(c) power taken by the instrument

(d) galvanometer sensitivity.

(18) A power factor meter is based on the principle of

(a) electrostatic instrument

b) Electrodynamometer instrument

(c) Electro thermo type instrument

(d) Rectifier type instrument.

(19) A potentiometer recorder is used for

(a) AC singles

(b) DC signals

(c) both (a) and (b)

(d) time varying signals

(e) none of these.

(20) Transformers used in conjunction with measuring instruments for measuring purposes are called

- (a) Measuring transformers
- (b) transformer meters
- (c) power transformers
- (d) instrument transformers
- (e) pulse transformers.

(21) Leakage flux in an electrical machine is measure by

- (a) Ballistic galvanometer
- (b) Flux meter
- (c) Either (a) or (b)
- (d) Vibration galvanometer
- (e) CRO

(22) A C.R.O. is used to indicate

- (a) supply waveform
- (b) magnitude of the applied voltage
- (c) B.H. loop
- (d) all of these
- (e) Magnitude of the current flowing in it.

(23) An oscillator is a

- (a) an amplifier having feedback network
- (b) a high gain amplifier
- (c) a wide band amplifier

(d) a untuned amplifier

(e) None of these

(24) Distortion can be measured by

(a) Wave meter

(b) Digital filters

(c) Wein bridge circuit

(d) Bridge T filter circuit

(25) Series connected Q- meter is preferable for measurement of components having

(a) high impedance

(b) low impedance

(c) both (a) and (b)

(d) high frequency

(e) low capacitance

(26) A potentiometer is

(a) an active transducer

(b) a passive transducer

(c) a secondary transducer

(d) a digital transducer

(e) a current sensing transducer

(27) The basic components of a digital voltmeter are:

(a) A/D converter and a counter

- (b) A/D converted and a rectifier
- (c) D/A converter and a counter
- (d) Ramp generator and counter
- (e) Comparator

(28) Which of the following electrical equipment cannot convert ac into dc

- (a) diode
- (b) converter
- (c) transformer
- (d) mercury arc rectifier

(29) Voltage measurement are often taken by using either a voltmeter or

- (a) an ammeter
- (b) an ohmmeter
- (c) an oscillator
- (d) a watt-meter

(30) The electric device which blocks DC but allows AC is called:

- (a) capacitance
- (b) inductor
- (c) an oscilloscope
- (d) a watt-meter

(31) The range of an ammeter can be extended by using a

- (a) shunt in series

- (b) shunt in parallel
- (c) multiplier in series
- (d) multiplier in parallel

(32) A device that changes one form of energy to another is called

- (a) rheostat
- (b) oscillator
- (c) transducer
- (d) varicap

(33) Aquadag is used in CRO to collect

- (a) primary electron
- (b) secondary electron
- (c) both primary and secondary
- (d) none of above

(34) A vertical amplifier for CRO can be designed for

- (a) only a high gain
- (b) only a broad bandwidth
- (c) a constant gain time bandwidth product
- (d) all of the above

(35) One of the following is active transducer

- (a) Strain gauge
- (b) Selsyn

- (c) Photovoltaic cell
- (d) Photo emissive cell

(36) The dynamic characteristics of capacitive transducer are similar to those of

- (a) low pass filter
- (b) high pass filter
- (c) band pass filter
- (d) band stop filter

(37) Thermocouples are

- (a) passive transducers
- (b) active transducers
- (c) both active and passive transducers
- (d) output transducers

(38) The size of air cored transducers as compare to iron core counter part are

- (a) bigger
- (b) smaller
- (c) same

(39) From the point of view of safety, the resistance of earthing electrode should be:

- (a) low
- (b) high
- (c) medium
- (d) the value of resistance of electrode does not effect the safety

(40) In CRT the focusing anode is located

- (a) between pre accelerating and accelerating anodes
- (b) after accelerating anodes
- (c) before pre accelerating anodes
- (d) none of above

(41) Which transducer converts heat energy into electrical energy

- (a) I. V. D. T.
- (b) thermocouple
- (c) photoconductor
- (d) none of the above

(42) Which of photoelectric transducer is used for production of electric energy by converting solar energy

- (a) photo emission cell
- (b) photo diode
- (c) photo transistor
- (d) both (b) and (c)

(43) Which of the following instruments consumes maximum power during measurement?

- (a) induction instruments
- (b) hot wire instruments
- (c) thermocouple instruments
- (d) electrodyamometer instruments

(44) Which of the following meters has the best accuracy

- (a) moving iron meter
- (b) moving coil meter
- (c) rectifier type meter
- (d) thermocouple meter

(45) The function of the safety resistor in ohm meter is to

- (a) limit the current in the coil
- (b) increase the voltage drop across the coil
- (c) increase the current in the coil
- (d) protect the battery

(46) Which of the following instruments is free from hysteresis and eddy current losses?

- (a) M.I. instrument
- (b) electrostatic instrument
- (c) electrodynameometer type instrument
- (d) all of these

(47) The dielectric loss of a capacitance can be measured by

- (a) Wien bridge
- (b) Owen bridge
- (c) Schering bridge
- (d) Maxwell bridge

(48) Reed frequency meter is essentially a

- (a) recording system
- (b) deflection measuring system
- (c) vibration measuring system
- (d) oscillatory measuring system

(49) In measurements made using a Q meter, high impedance elements should preferably be connected in

- (a) star
- (b) delta
- (c) series
- (d) parallel

(50) A digital voltmeter measures

- (a) peak value
- (b) peak-to-peak value
- (c) rms value
- (d) average value