ELECTRICAL AND ELECTRONICS MEASUREMENT.
OBJECTIVE TYPE QUESTIONS

1. The use of _____ instruments is merely confined within laboratories as standardizing Instruments.
(a) absolute
(b) indicating
(c) recording
(d) integrating
(e) none of the above
Ans: a
2. Which of the following instruments indicate the instantaneous value of the electrical quantity being measured at the time at which it is being measured ?
(a) Absolute instruments
(b) Indicating instruments
(c) Recording instruments
(d) Integrating instruments
Ans: b
3. _____ instruments are those which measure the total quantity of electricity delivered in a particular time.
(a) Absolute
(b) Indicating
(c) Recording
(d) Integrating
Ans: d
4. Which of the following are integrating instruments ?
(a) Ammeters
(b) Voltmeters
(c) Wattmeters
(d) Ampere-hour and watt-hour meters
Ans: d
5. Resistances can be measured with the help of
(a) wattmeters
(b) voltmeters
(c) ammeters
(d) ohmmeters and resistance bridges
(e) all of the above
Ans: d
6 According to application, instruments are classified as
(a) switch board
(b) portable
(c) both (a) and (b)
(d) moving coil
(e) moving iron
(f) both (d) and (e)

Ans: c
7. Which of the following essential features is possessed by an indicating instrument ?
(a) Deflecting device
(b) Controlling device
(c) Damping device
(d) All of the above
Ans: d
8. 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
Ans: c
9. The spring material used in a spring control device should have the following property.
(a) Should be non-magnetic
(b) Most be of low temperature co-efficient
(c) Should have low specific resistance
(d) Should not be subjected to fatigue
(e) All of the above
Ans: e
10. Which of the following properties a damping oil must possess ?
(a) Must be a good insulator
(b) Should be non-evaporating
(c) Should not have corrosive action upon the metal of the vane
(d) The viscosity of the oil should not change with the temperature
(e) All of the above
Ans: e
11. A moving-coil permanent-magnet instrument can be used as _____ by using a low resistance shunt.
(a) ammeter
(b) voltmeter
(c) flux-meter
(d) ballistic galvanometer
Ans: a
12. A moving-coil permanent-magnet instrument can be used as flux-meter
(a) by using a low resistance shunt
(b) by using a high series resistance
(c) by eliminating the control springs
(d) by making control springs of large moment of inertia
Ans: c
13. Which of the following devices may be used for extending the range of instruments ?
(a) Shunts
(b) Multipliers
(c) Current transformers
(d) Potential transformers

(e) All of the above
Ans: e
14. An induction meter can handle current upto
(a) 10 A
(b) 30 A
(c) 60 A
(d) 100 A
Ans: d
15. For handling greater currents induction wattmeters are used in conjunction with
(a) potential transformers
(b) current transformers
(c) power transformers
(d) either of the above
(e) none of the above
Ans: b
16. Induction type single phase energy meters measure electric energy in
(a) kW
(b) Wh
(c) kWh
(d) VAR
(e) None of the above
Ans: c
17. Most common form of A.C. meters met with in every day domestic and industrial installations are
(a) mercury motor meters
(b) commutator motor meters
(c) induction type single phase energy meters
(d) all of the above
Ans: c
18. Which of the following meters are not used on D.C. circuits
(a) Mercury motor meters
(b) Commutator motor meters
(c) Induction meters
(d) None of the above
Ans: c
19. Which of the following is an essential part of a motor meter ?
(a) An operating torque system
(b) A braking device
(c) Revolution registering device
(d) All of the above
Ans: d
20. A potentiometer may be used for
(a) measurement of resistance
(b) measurement of current
(c) calibration of ammeter
(d) calibration of voltmeter

(e) all of the above
Ans: e
21 is an instrument which measures the insulation resistance of an electric circuit relative to earth and one another,
(a) Tangent galvanometer
(b) Meggar
(c) Current transformer
(d) None of the above
Ans: b
22. The household energy meter is
(a) an indicating instrument
(b) a recording instrument
(c) an integrating instrument
(d) none of the above
Ans: c
23. The pointer of an indicating instrument should be
(a) very light
(b) very heavy
(c) either (a) or (b)
(d) neither (a) nor (b)
Ans: a
24. The chemical effect of current is used in
(a) D.C. ammeter hour meter
(b) D.C. ammeter
(c) D.C. energy meter
(d) none of the above
Ans: a
25. In majority of instruments damping is provided by
(a) fluid friction
(b) spring
(c) eddy currents
(d) all of the above
Ans: c
26. An ammeter is a
(a) secondary instrument
(b) absolute instrument
(c) recording instrument
(d) integrating instrument
Ans: a
27. In a portable instrument, the controlling torque is provided by
(a) spring
(b) gravity
(c) eddy currents
(d) all of the above
Ans: a
28. The disc of an instrument using eddy current damping should be of

(a) conducting and magnetic material
(b) non-conducting and magnetic material
(c) conducting and non-magnetic material
(d) none of the above
Ans: c
29. The switch board instruments
(a) should be mounted in vertical position
(6) should be mounted in horizontal position
(c) either (a) or (b)
(d) neither (a) nor (b)
Ans: a
30. The function of shunt in an ammeter is to
(a) by pass the current
(b) increase the sensitivity of the ammeter
(c) increase the resistance of ammeter
(d) none of the above
Ans: a
31. The multiplier and the meter coil in a voltmeter are in
(a) series
(b) parallel
(c) series-parallel
(d) none of the above
Ans: a
32. A moving iron instrument can be used for
(a) D.C. only
(b) A.C. only
(c) both D.C. and A.C.
Ans: c
33. The scale of a rectifier instrument is
(a) linear
(b) non-linear
(c) either (a) or (b)
(d) neither (a) nor (b)
Ans: a
34. For measuring current at high frequency we should use
(a) moving iron instrument
(b) electrostatic instrument
(c) thermocouple instrument
(d) none of the above
Ans: c
35. The resistance in the circuit of the moving coil of a dynamometer wattmeter should be
(a) almost zero
(b) low
(c) high
(d) none of the above
Ans: c

36. A dynamometer wattmeter can be used for
(a) both D.C. and A.C.
(b) D.C. only
(c) A.C. only
(d) any of the above
Ans: a
37. An induction wattmeter can be used for
(a) both D.C. and A.C.
(6) D.C. only
(c) A.C. only
(d) any of the above
Ans: b
38. The pressure coil of a wattmeter should be connected on the supply side of the current coil when
(a) load impedance is high
(b) load impedance is low
(c) supply voltage is low
(d) none of the above
Ans: a
39. In a low power factor wattmeter the pressure coil is connected
(a) to the supply side of the current coil
(b) to the load side of the current coil
(c) in any of the two meters at connection
(d) none of the above
Ans: b
40. In a low power factor wattmeter the compensating coil is connected
(a) in series with current coil
(b) in parallel with current coil
(c) in series with pressure coil
(d) in parallel with pressure coil
Ans: c
41. In a 3-phase power measurement by two wattmeter method, both the watt meters had identical readings. The power factor of the load was
(a) unity
(6) 0.8 lagging
(c) 0.8 leading
(d) zero
Ans: a
42. In a 3-phase power measurement by two wattmeter method the reading of one of the wattmeter was zero. The power factor of the load must be
(a) unity
(b) 0.5
(c) 0.3
(d) zero
Ans: b
43. The adjustment of position of shading bands, in an energy meter is done to provide

(a) friction compensation
(b) creep compensation
(c) braking torque
(d) none of the above
Ans: a
44. An ohmmeter is a
(a) moving iron instrument
(b) moving coil instrument
(c) dynamometer instrument
(d) none of the above
Ans: b
45. When a capacitor was connected to the terminal of ohmmeter, the pointer indicated a low resistance initially and then slowly came to infinity position. This shows that capacitor is
(a) short-circuited
(b) all right
(c) faulty
Ans: b
46. For measuring a very high resistance we should use
(a) Kelvin's double bridge
(b) Wheat stone bridge
(c) Meggar
(d) None of the above
Ans: c
47. The electrical power to a meggar is provided by
(a) battery
(b) permanent magnet D.C. generator
(c) AC. generator
(d) any of the above
Ans: b
48. In a meggar controlling torque is provided by
(a) spring
(b) gravity
(c) coil
(d) eddy current
Ans: c
49. The operating voltage of a meggar is about
(a) 6 V
(b) 12 V
(c) 40 V
(d) 100 V
Ans: d
50. Murray loop test can be used for location of
(a) ground fault on a cable
(b) short circuit fault on a cable
(c) both the ground fault and the short-circuit fault
(d) none of the above

Ans: c
51. Which of the following devices should be used for accurate measurement of low D.C. voltage ?
(a) Small range moving coil voltmeter
(b) D.C. potentiometer
(c) Small range thermocouple voltmeter
(d) None of the above
Ans: b
52. It is required to measure the true open circuit e.m.f. of a battery. The best device is
(a) D.C. voltmeter
(b) Ammeter and a known resistance
(c) D.C. potentiometer
(d) None of the above
Ans: c
53. A voltage of about 200 V can be measured
(a) directly by a D.C. potentiometer
(b) a D.C. potentiometer in conjunction with a volt ratio box
(c) a D.C. potentiometer in conjunction with a known resistance
(d) none of the above
Ans: b
54. A direct current can be measured by
(a) a D.C. potentiometer directly
(b) a D.C. potentiometer in conjunction with a standard resistance
(c) a D.C. potentiometer in conjunction with a volt ratio box
(d) none of the above
Ans: b
55. To measure a resistance with the help of a potentiometer it is
(a) necessary to standardise the potentiometer
(b) not necessary to standardise the potentiometer
(c) necessary to use a volt ratio box in conjunction with the potentiometer
(d) none of the above
Ans: b
56. A phase shifting transformer is used in conjunction with
(a) D.C. potentiometer
(b) Drysdale potentiometer
(c) A.C. co-ordinate potentiometer
(d) Crompton potentiometer
Ans: b
57. Basically a potentiometer is a device for
(a) comparing two voltages
(b) measuring a current
(c) comparing two currents
(d) measuring a voltage
(e) none of the above
Ans: a
58. In order to achieve high accuracy, the slide wire of a potentiometer should be

(a) as long as possible
(b) as short as possible
(c) neither too small not too large
(d) very thick
Ans: a
59. To measure an A. C. voltage by using an A.C. potentiometer, it is desirable that the supply for the potentiometer in taken
(a) from a source which is not the same as the unknown voltage
(b) from a battery
(c) from the same source as the unknown voltage
(d) any of the above
Ans: c
60. The stator of phase shifting transformer for use in conjunction with an A.C. potentiometer usually has a
(a) single-phase winding
(b) two-phase winding
(c) three-phase winding
(d) any of the above
Ans: b
61. In an AC. co-ordinate potentiometer, the currents in the phase and quadrature potentiometer are adjusted to be
(a) out of phase by 90°
(6) out of phase by 60°
(c) out of phase by 30°
(d) out of phase by 0°
(e) out of phase by 180°
Ans: a
62. A universal RLC bridge uses
(a) Maxwell bridge configuration for measurement of inductance and De Santas bridge for measurement of capacitance
(b) Maxwell Wein bridge for measurement of inductance and modified De Santy's bridge for measurement of capacitance
(c) Maxwell Wein bridge for measurement of inductance and Wein bridge for measurement of capacitance
(d) Any of the above.
Ans: b
63. For measurements on high voltage capacitors, the suitable bridge is
(a) Wein bridge
(b) Modified De Santy's bridge
(c) Schering bridge
(d) Any of the above
(e) None of the above
Ans: c
64. In an Anderson bridge, the unknown inductance is measured in terms of
(a) known inductance and resistance
(b) known capacitance and resistance

(c) known resistance
(d) known inductance
Ans: b
65. Wagner earthing device is used to eliminate errors due to
(a) electrostatic coupling
(b) electromagnetic coupling
(c) both (a) and (b)
(d) none of the above
Ans: a
66. For measurement of mutual inductance we can use
(a) Anderson bridge
(b) Maxwell's bridge
(c) Heaviside bridge
(d) Any of the above
Ans: c
67. For measurement of inductance having high value, we should use
(a) Maxwell's bridge
(b) Maxwell Wein bridge
(c) Hay's bridge
(d) Any of the above
Ans: c
68. If the current in a capacitor leads the voltage by 80°, the loss angle of the capacitor is
(a) 10°
(b) 80°
(c) 120°
(d) 170°
Ans: a
69. In a Schering bridge the potential of the detector above earth potential is
(a) a few volts only
(6) 1 kV
(c) 5 kV
(d) 10 kV
Ans: a
70. To avoid the effect of stray magnetic field in A.C. bridges we can use
(a) magnetic screening
(b) Wagner earthing device
(c) wave filters
(d) any of the above
Ans: a
71. If an inductance is connected in one arm of bridge and resistances in the remaining three arms
(a) the bridge can always be balanced
(b) the bridge cannot be balanced
(c) the bridge can be balanced if the resistances have some specific values
Ans: b
72. A power factor meter has

(a) one current circuit and two pres¬sure circuits
(b) one current circuit and one pressure circuit
(c) two current circuits and one pres¬sure circuit
(d) none of the above
Ans: a
73. The two pressure coils of a single phase power factor meter have
(a) the same dimensions and the same number of turns
(b) the same dimension but different number of turns
(c) the same number of turns but different dimensions
(d) none of the above
Ans: a
74. In a single phase power factor meter the phase difference between the currents in the two pressure coils is
(a) exactly 0°
(b) approximately 0°
(c) exactly 90°
(d) approximately 90°
Ans: c
75. In a dynamometer 3-phase power factor meter, the planes of the two moving coils are at
(a) 0°
(b) 60°
(c) 90°
(d) 120°
Ans: d
76. In a vibrating reed frequency meter the natural frequencies of two adjacent reeds have a difference of
(a) 0.1 Hz
(b) 0.25 Hz
(c) 0.5 Hz
(d) 1.5 Hz
Ans: c
77. In a Weston frequency meter, the magnetic axes of the two fixed coils are
(a) parallel
(b) perpendicular
(c) inclined at 60°
(d) inclined at 120°
Ans: b
78. A Weston frequency meter is
(a) moving coil instrument
(b) moving iron instrument
(c) dynamometer instrument
(d) none of the above
Ans: b
79. A Weston synchronoscope is a
(a) moving coil instrument
(b) moving iron instrument

(c) dynamometer instrument
(d) none of the above
Ans: c
80. In a Weston synchronoscope, the fixed coils are connected across
(a) bus-bars
(b) incoming alternator
(c) a lamp
(d) none of the above
Ans: b
81. In Weston synchronoscope the moving coil is connected across
(a) bus-bars
(b) incoming alternator
(c) fixed coils
(d) any of the above
Ans: a
82. The power factor of a single phase load can be calculated if the instruments available are
(a) one voltmeter and one ammeter
(b) one voltmeter, one ammetqr and one wattmeter
(c) one voltmeter, one ammeter and one energy meter
(d) any of the above
Ans: b
83. The desirable static characteristics of a measuring system are
(a) accuracy and reproducibility
(b) accuracy, sensitivity and reproducibility
(c) drift and dead zone
(d) static error
Ans: b
84. The ratio of maximum displacement deviation to full scale deviation of the instrument is called
(a) static sensitivity
(b) dynamic deviation
(c) linearity
(d) precision or accuracy
Ans: c
85. Systematic errors are
(a) instrumental errors
(b) environmental errors
(c) observational errors
(d) all of the above
Ans: d
86. Standard resistor is made from
(a) platinum
(b) maganin
(c) silver
(d) nichrome
Ans: b

87. Commonly used standard capacitor is
(a) spherical type
(b) concentric cylindrical type
(c) electrostatic type
(d) multilayer parallel plate type
Ans: b
88. Operating torques in analogue instruments are
(a) deflecting and control
(b) deflecting and damping
(c) deflecting, control and damping
(d) vibration and balancing
Ans: c
89. Commonly used instruments in power system measurement are
(a) induction
(b) moving coil or iron
(c) rectifier
(d) electrostatic
Ans: a
90. Damping of the Ballistic galvanometer is made small to
(a) get first deflection large
(b) make the system oscillatory
(c) make the system critically damped
(d) get minimum overshoot
Ans: a
91. If an instrument has cramped scale for larger values, then it follows
(a) square law
(b) logarithmic law
(c) uniform law
(d) none of the above
Ans: b
92. Volt box is a component to
(a) extend voltage range
(6) measure voltage
(c) compare voltage in a box
(d) none of the above
Ans: a
93. E.m.f. of a Weston cell is accurately measured by
(a) electrostatic voltmeter
(b) hot wire voltmeter
(c) isothermal voltmeter
(d) electrodynamic voltmeter
Ans: a
94. The gravity controlled instrument has crowded scale because current is proportional to
(a) balancing weight
(b) deflection angle
(c) sine of deflection angle

Ans: c
95. A sensitive galvanometer produces large deflection for a
(a) small value of current
(b) large value of current
(c) large value of power
(d) large value of voitage
(e) none of the above
Ans: a
96. A multirangq instrument has
(a) multiple shunt or series resistances inside the meter
(b) multicoii arrangement
(c) variable turns of coil
(d) multi range meters inside the measurement system
(e) any of the above
Ans: a
97. The rectifier instrument is not free from
(a) temperature error
(b) wave shape error
(c) frequency error
(d) all of the above
Ans: c
98. Alternating current is measured by
(a) induction ammeter
(b) permanent magnet type ammeter
(c) electrostatic ammeter
(d) moving iron repulsion type voltmeter
Ans: a
99. Most sensitive galvanometer is
(a) elastic galvanometer
(b) vibration galvanometer
(c) Duddlb galvanometer
(d) spot ballistic galvanometer
Ans: d
100. Instrument transformers are
(a) potential transformers
(b) current transformers
(c) both (a) and (b)
(d) power transformers
Ans: c
101. An instrument transformer is used to extend the range of
(a) induction instrument
(b) electrostatic instrument
(c) moving coil instrument
(d) any of the above
Ans: a
102. Wattmeter cannot be designed on the principle of

(a) electrostatic instrument
(b) thermocouple instrument
(c) moving iron instrument
(d) electrodynamic instrument
Ans: c
103. In an energymeter braking torque is produced to
(a) safe guard it against creep
(b) brake the instrument
(c) bring energy meter to stand still
(d) maintain steady speed and equal to driving torque
Ans: d
104. Various adjustments in an energy meter include
(a) light load or friction
(b) lag and creep
(c) overload and voltage compensation
(d) temperature compensation
(e) all of the above
Ans: e
105. The power of a n-phase circuit can be measured by using a minimum of
(a) (n - 1) wattmeter elements
(b) n wattmeter elements
(c) (n + 1) wattmeter elements
(d) 2n wattmeter elements
Ans: a
106. Two holes in the disc of energymeter are drilled at the opposite sides of the spindle to
(a) improve its ventilation
(b) eliminate creeping at no load
(c) increase its deflecting torque
(d) increase its braking tcrque
Ans: b
107. Which of the following is measured by using a vector voltmeter ?
(a) Amplifier gain and phase shift
(b) Filler transfer functions
(c) Complex insersion loss
(d) All of the above
Ans: d
108. The principle on which vector voltmeter is based is
(a) that it works on the principle of complex variation
(b) that it measures the response of linear ramp voltage
(c) same as digital meter
(d) that it measures the amplitude of a single at two points and at the same time measures their phase difference
Ans: d
109. To measure radio frequency, the suitable frequency meter is
(a) Weston frequency meter
(b) reed vibrator frequency meter

(c) hetrodyne frequency meter
(d) electrical resonance frequency meter
Ans: c

110.To measure radio frequency, the suitable frequency meter is

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(d) electrical resonance frequency meter Ans: c

111.A bridge circuit is used for the components?

a) Resistance, capacitance, and inductance
b) Diode, triode, and thyristor
c) Transistor, thermistor, and antenna
d) LED, op amp, and transducer

112. A simple bridge circuit consists of a network of _____
a) 3 resistance arms
b) 2 resistance arms
c) **4 resistance arms**
d) 6 resistance arms

113. D.C. bridges are used for _____
a) measurement of resistance
b) measurement of capacitance
c) measurement of current
d) measurement of inductance

114.Range of an electrical instrument depends on _____
a) current
b) voltage
c) power
d) resistance

115.What is the current transformer?
a) transformer used with an A.C. ammeter
b) transformer used with an D.C.

ammeter
c) transformer used with an A.C. voltmeter
d) transformer used with an D.C. voltmeter

116.What is the potential transformer?
a) transformer used with an D.C. ammeter
b**) transformer used with an A.C. voltmeter**
c) transformer used with an D.C. ammeter
d) all

117.C.T. and P.T. are used for _____
a) measuring low current and voltages
b) measuring very low current and voltages
c) measuring high currentsand voltages
d) measuring intermediate currents and voltages

118.Turns ration for a C.T. is _____
a) $n = {}^{N_p}/_{N_s}$
b) $n = {}^{N_s}/_{N_p}$
c) $n = {}^{1}/_{N_p}$
d) $n = N_s$

119.The primary winding of a C.T. has _____
a) a larger number of turns
b) no turns at all
c) intermediate number of turns
d) a few turns

120.A 5A ammeter can measure a current of upto 1000 A using a _____

a) 5/1000A C.T.
b) 1000A C.T.
c) 5A C.T.
d) 1000/5A C.T.

121. A 110V voltmeter can measure a voltage of upto 110kV using a _____
a) 110000/110V P.T.
b) 110000V P.T.
c) 110V P.T.
d) 110/110000V P.T.

122.Transformation ratio of an instrument is defined as _____
a) ratio of primary to secondary phasor
b) ratio of secondary to primary phasor
c) reciprocal of the primary phasor
d) reciprocal of the secondary phasor

123.Nominal ratio of an instrument transformer is defined as the _____
a) reciprocal of the rated primary value
b) ratio of rated secondary value to primary value
c) reciprocal of the rated secondary value
d) ratio of rated primary value to secondary value

124.Ratio error is due to _____
a) iron loss
b) C.T.
c) magnetising component
d) supply voltage

125.Phase angle error is due to _____
a) C.T.
b) magnetising component

c) iron loss
d) supply voltage

126. Errors in a C.T. can be minimised by _____
a) making use of laminations
b) having low reactance
c) increasing the secondary winding turns
d) decreasing the primary winding turns

127.Electrical transducers generate _____
a) biological signals
b) chemical signals
c) physical signals
d) electrical signals

128.Capacitive transduction involves _____
a) change in resistance
b) change in inductance
c) change in resistance
d) change in capacitance

129. A transducer must be _____
a) quick in response
b) slow in response
c) medium in response
d) very slow in response

130. Electrical strain gauge works on the principle of _____
a) variation of resistance
b) variation of capacitance
c) variation of inductance
d) variation of area

131. Commonly used elements for wire strain gauges are _____
a) nickel and copper
b) nickel and gold

c) gold and brass
d) silver and aluminium

132.Gauge factor is given by which of the following relation?
a) $S = \Delta R/R\Delta l$
b) $S = \Delta R\Delta l/l$
c) $S = R\Delta l/l$
d) **$S = \Delta R/R/\Delta l/l$**

133. An inductive transducer measures the variation in _____
a) reluctance
b) resistance
c) capacitance
d) self-inductance

134.Piezoelectric transducer is used for measuring _____
a) non-electrical quantities
b) electrical quantities
c) chemical quantities
d) any quantity

135.. When a compressive force is applied to a quartz crystal then _____
a) positive charges are induced
b) negative charges are induced
c) no charge is induced
d) both positive and negative charges are induced

136. A quartz crystal is _____
a) a chemical transducer
b) a photoelectric transducer
c) not a self-generating transducer
d) a self-generating transducer

137.Typically oscilloscope represents _____
a) current and time
b) resistance and time

c) voltage and time
d) power and time

138.CRO stands for _____
a**) Cathode Ray Oscilloscope**
b) Current Resistance Oscillator
c) Central Resistance Oscillator
d) Capacitance Resistance Oscilloscope

139.How is frequency related to time period?
a) square proportional
b) not related
c) directly proportional
d) inversely proportional

140. Period of a waveform is obtained by which of the following relation?
a) T = number of divisions occupied by 1 cycle×(time)
b) T = number of divisions occupied by 1 cycle×($^{1}/_{division}$)
c) T = number of divisions occupied by 1 cycle×($^{time}/_{division}$)
d) T = number of divisions occupied by 1 cycle

141.CRO uses _____
a) 2 delay lines
b) 3 delay lines
c) 4 delay lines
d) 5 delay lines

142. T section in a delay circuit of CRO acts as _____
a) high pass filter
b) low pass filter
c) band pass filter
d) band reject filter

143.Lumped parameter delay line consists of_____

a) RC networks
b) RL networks
c) LC networks
d) Resistive networks

144.Typical values for a distributed parameter delay line are _____
a) Z_o = 10 MΩ and t_d = 10 nsec/m
b) Z_o = 1 kΩ and t_d = 500 nsec/m
c) Z_o = 1000 Ω and t_d = 180 nsec/m
d) Z_o = 100 GΩ and t_d = 275 nsec/m

145. Front panel of a CRO has _____
a) 4 sections
b) 8 sections
c) 15 sections
d) 20 sections

146.What is the role of the intensity section in a CRO?
a) decreases the light intensity
b) controls light intensity
c) increases the light intensity
d) keeps the light intensity zero

147. What is the role of the focus section in a CRO?
a) increases the focus
b) decreases the focus
c) controls sharpness
d) maintains the focus zero

148.What is the role of astigmatism in a CRO?
a) increases the intensity
b) used for voltage stability
c) diminishes the intensity
d) focus control

149.Time domain oscilloscopes require _____
a) sweep generator

b) oscillator
c) amplifier
d) rectifier

150.What is the main advantage of using a digital storage oscilloscope?
a) uses digital storage
b) uses analog storage
c) uses mixed mode storage
d) uses disc storage

151.The waveform is stored in _____
a) compressed form
b) analog form
c) digital form
d) mixed form

152. The analog signal is digitized using _____
a) D/A converter
b) Oscillator
c) A/D converter
d) Rectifier

153 A digital storage oscilloscope has _____
a) 3 modes
b) 2 modes
c) 4 modes
d) 5 modes

154.Loading effect in electronic voltmeters is _____
a) nil
b) high
c) low
d) medium

155.input impedance of a voltmeter is _____
a) high
b) low

c) medium
d) zero

156. Measurement of heat power _____
a) uses a heat sink
b) uses a thermometer
c) uses a thermocouple
d) uses a black body

157.Digital voltmeters converts _____
a) analog to digital signal
b) digital to analog signal
c) current to voltage
d) resistance to voltage

158.Input range of DVM is _____
a) 1 V to 1000 V
b) 0.1 V to 10 V
c) 0.01 V to 1 V
d) 0.001 V to 0.1 V

159.Q factor is also defined as the ratio of _____
a) resistance to reactance
b) reactance to resistance
c) power to voltage
d) current to power

160.Q meter works on the principle of _____
a) barkhausen criterion
b) piezoelectric effect
c) parallel resonance
d) series resonance

161. Accuracy is defined as the

(a) Measure of the consistency or reproducibility of the measurement.

(b) Closeness with which an instrument reading approaches the true value of the quantity being measured.

(c) Smallest measurable input change.

(d) Ratio of the change in output signal of an instrument to a change in the input.

162. Systematic errors are

(a) instrumental errors.

(b) environmental errors.

(c) observational errors.

d) all of the above.

163. . Low resistance refers to _____
a) resistances of the order of 1Ω
b) resistances of the order of 1kΩ
c) resistances of the order of 1mΩ
d) resistances of the order of 1MΩ

164. Which is not a source of error in the measurement of low resistance?
a**) contact resistance drops at the leads**
b) thermal e.m.f
c) temperature effect
d) power dissipation through the circuit

165. Which is the most popular method for measuring low resistance?
a) ammeter-voltmeter method
b) potentiometer method
c**) kelvin double bridge method**
d) ducter ohmmeter method

166. Kelvin's bridge consists of _____
a) double bridge
b) single bridge
c) half bridge
d) three fourth bridge

167. The range of resistance measured in a Kelvin bridge is _____
a) 10Ω to 10 mΩ
b**) 1Ω to 10 μΩ**
c) 0.01Ω to 10 MΩ
d) 0.1Ω to 10 nΩ

168. Accuracy of Kelvin bridge is of the order of _____
a) ±0.5 to ±2 %
b) ±0.05 to ±0.02 %
c) ±0.05 to ±0.2 %
d) ±0.005 to ±0.02 %

169. Schering bridge is used for _____
a) low voltages only
b) low and high voltages
c) high voltages only
d) intermediate voltages only

170. A Schering bridge can be used for the _____
a) measuring voltages
b) measuring currents
c) testing capacitors
d) protecting the circuit from temperature rises

171. Anderson bridge is used for _____
a) the measurement of self-inductance
b) the measurement of resistance
c) the measurement of capacitance
d) the measurement of impedance

172. What is earthing?
a) connecting electrical machines to earth
b) providing a connection to the ground
c) connecting the electrical machines to source
d) providing a source of current

173. What is an earth electrode?
a) electrode that is connected to earth
b) material used for earthing
c) electrode connected to the circuit
d) electrode which is connected to the mains

174. In a three phase system, the neutral is _____
a) earthed
b) connected to low voltage
c) connected to high voltage
d) not connected

175. In general bridges consist of _____
a) lumped inductances
b) lumped resistances
c) distributed capacitance
d) distributed impedance

176. Stray capacitance effects can be minimized by _____
a) making use of an inductance
b) connecting a resistance in series
c) shielding and grounding
d) using a galvanometer

177. Wagner device is a _____
a**) capacitance bridge**
b) resistance bridge
c) inductance bridge
d) impedance bridge

178. Induction type instruments are used for _____
a**) A.C. measurements**
b) D.C. measurements
c) Resistance measurements
d) Voltage measurements

179. Series electromagnet consists of _____
a) L shaped laminations
b) T shaped laminations
c**) U shaped laminations**
d) Y shaped laminations

180. Braking system consists of _____
a) bar magnet
b) temporary magnet
c) permanent magnet
d) super magnet

181. What is the effect of eddy currents in the aluminium disc?
a) varies by a factor of twice the disc length
b) independent of the disc speed
c) varies by a factor of four times the disc size
d**) proportional to the disc speed**

182. Pressure coil of a wattmeter _____

a) has capacitance and inductance

b) has inductance and resistance

c) has resistance and capacitance

d) has only inductance

183. What is the effect of capacitance on wattmeter reading?

a) aiding the inductance

b) opposite to that of inductance

c) aiding the capacitance

d) opposite to that of resistance

184. Dynamometer type wattmeter has _____

a) strong magnetic field

b) intermediate magnetic field

c) weak magnetic field

d) no magnetic field

185. Wattmeter reading has errors induced by _____

a) resistance

b) self-capacitance

c) self-inductance

d) mutual inductance

186. What is the effect of frequency on the torque of a moving system?

a) torque is half of the frequency

b**) torque is twice the frequency**

c) torque is thrice the frequency

d) torque is four times the frequency

187. Energy meter reads correctly when the _____

a) torque is small

b) torque is large

c) torque is medium

d) torque is zero

188. Friction torque is eliminated by _____

a) using lubricating oil

b) by suspending the components in air

c) by adjusting the position of limb

d) by using steel alloy components

189. Self braking torque is _____
a) proportional to cube of load current
b) proportional to load current
c) proportional to square of load current
d) proportional to reciprocal of load current

190. Self braking action is minimised by _____
a) maintaining high speed for disc
b) maintaining medium speed for disc
c) keeping the disc at rest
d) maintaining low speed for disc

191. Overload compensating devices is _____
a) in the form of a magnetic shunt
b) in the form of a series magnet
c) in the form of a transformer
d) in the form of a supply

192. Input voltage depends on _____
a) resistance
b) capacitance
c) current
d) time-period