

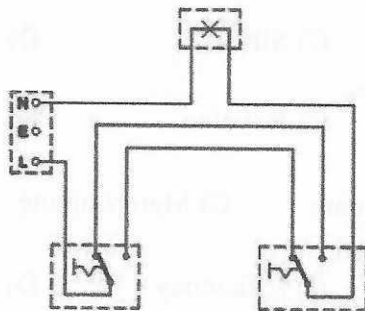
ELECTRICITY 'OP' CIRCLE, CHANDIGARH
POST: ASSTT. LINEMAN
Question Booklet & Answer Key
09.04.2023 (Sunday)

1. An ideal voltage source should have
 - A) Large value of emf
 - B) Small value of emf
 - C) Zero source resistance
 - D) Infinite source resistance
2. Passive element in a circuit is one which
 - A) Receives energy
 - B) Supplies energy
 - C) Both receives and supplies energy
 - D) Neither receives nor supplies energy
3. To determine the polarity of the voltage, drop across a resistor, it is necessary to know
 - A) Value of current through resistor
 - B) Direction of current through resistor
 - C) Value of resistor
 - D) Emf in the circuit
4. A network which contains one or more than one source of emf is known as
 - A) Linear network
 - B) Passive network
 - C) Non-linear network
 - D) Active network
5. In a delta connected network, when resistor is open, the power will be
 - A) Zero
 - B) Reduced to 1/3
 - C) Reduced by 1/3
 - D) Unchanged
6. The value of domestic supply is 220V, this value represents
 - A) Mean value
 - B) rms value
 - C) Peak value
 - D) Average value
7. The rms value and mean value is same in the case of
 - A) Angular wave
 - B) Sine wave
 - C) Square wave
 - D) Half-wave rectifier sine wave
8. The ratio of Form Factor to a sine wave is
 - A) 1.414
 - B) 0.707
 - C) 1.11
 - D) 0.637
9. A circuit component that opposes the change in circuit voltage is
 - A) Resistance
 - B) Capacitance
 - C) Inductance
 - D) All of the above
10. Power loss in an electrical circuit can take place in
 - A) Inductance only
 - B) Capacitance only
 - C) Inductance and resistance only
 - D) Resistance only
11. The power factor of an ordinary electric bulb is
 - A) Zero
 - B) Unity
 - C) Slightly more than unity
 - D) Slightly less than unity
12. At resonance, PF of the circuit is taken as
 - A) Unity
 - B) Lagging
 - C) Leading
 - D) Zero
13. The effective value of a sinusoidal $i(t) = I_m \sin \omega t$ is equal to
 - A) $I_m/\sqrt{2}$
 - B) $2I_m/\pi$
 - C) $I_m/2$
 - D) I_m/π
14. The normal secondary distribution voltage in our country is
 - A) 220V
 - B) 250V
 - C) 320V
 - D) 765V
15. A 10-mH inductor carries a sinusoidal current of 1A rms at a frequency of 50Hz. The average power dissipated by the inductor is
 - A) 0W
 - B) 0.25W
 - C) 0.5W
 - D) 1.0W
16. In a balanced three phase star connected system the phase difference between phase voltages and their respective line voltages is
 - A) 30°
 - B) 60°
 - C) 120°
 - D) 45°
17. Wattmeter is an instrument which measures
 - A) Instantaneous power
 - B) Average real power
 - C) Apparent power
 - D) Reactive power
18. The minimum number of wattmeter needed to measure power in a three phase unbalanced star-connected load is
 - A) One
 - B) Two
 - C) Three
 - D) Four
19. The unit of magnetic flux is
 - A) Henry
 - B) Weber
 - C) Ampere-turn/meter
 - D) Ampere/meter
20. Mmf is analogous to
 - A) Electric current
 - B) Current density
 - C) Emf
 - D) Voltage

21. Permanent magnets are normally made up of
A) Alloy B) Aluminium C) Cast iron D) Graphite
22. Which part of the magnetic circuit required least mWb
A) Core B) Coil C) Air-gap D) Inductance
23. The area of hysteresis loop is a measure of
A) Permittivity B) Permeance C) Energy loss per cycle D) Magnetic force
24. The core flux in the core depends upon
A) Supply voltage B) Supply voltage and frequency
C) Supply voltage, frequency and load
D) Supply voltage and load but independent of frequency
25. The property of a material which opposes the production of magnetic flux in it is known as
A) Mmf B) Reluctance C) Permeance D) Permittivity
26. Alternating current is measured by
A) Ammeter B) Moving iron ammeter C) Electrostatic ammeter D) Moving iron voltmeter
27. The internal resistance of an ammeter is
A) Zero B) Very small C) Very high D) Infinite
28. Creeping error occurs in
A) Ammeter B) Voltmeter C) Energy meter D) PMMC instruments
29. The dynamometer type wattmeter can be used to measure
A) DC power B) AC power C) AC and DC power D) Neither AC nor DC
30. Damping torque is provided in indicating instruments by
A) Air friction B) Fluid friction C) Eddy current damping D) All of the above
31. The efficiency of transformer will be maximum when
A) Copper loss=iron loss B) Eddy current loss=copper loss
C) Copper loss=hysteresis loss D) Eddy loss=hysteresis loss
32. The short circuit test is performed on the transformer to determine
A) Copper loss B) Iron loss C) Eddy current loss D) Hysteresis loss
33. A transformer can have regulation equal to zero
A) On full load B) On half load C) On leading power factor D) On zero power factor
34. Auto transformer consists of
A) Single winding B) Two windings C) Three windings D) Four windings
35. The core of a large transformer is built of
A) Cast steel B) Cast iron C) Silicon steel D) Mild steel
36. A transformer core is laminated to
A) Reduce hysteresis loss B) Reduce eddy current loss
C) Reduce copper loss D) Reduce stray loss
37. In an ideal transformer the impedance transferred from one side to the other is
A) Direct square ratio of turns B) Direct ratio of turns
C) Inverse square ratio of turns D) Inverse ratio of turns
38. If the applied voltage of a transformer is increased by 50%, while its frequency is reduced to 50%, the core flux density will become
A) Three times B) 3/4 times C) 1/3 times D) Remains the same
39. The induced emf in a dc machine is proportional to
A) Field flux only B) Speed of armature only
C) Armature current only D) Both field flux and speed
40. The segments of the commutator of d.c. machine are made up of
A) Brass B) Copper C) Carbon D) Silicon steel

41. As the load increases, the speed of dc shunt motor will
 - A) Decrease slightly
 - B) Increase slightly
 - C) Remains constant
 - D) First increases and then decreases
42. Which motor is used to drive constant speed load?
 - A) Cumulative compound motor
 - B) DC shunt motor
 - C) Differentially compound motor
 - D) DC series motor
43. The direction of rotation of DC series motor can be reversed by
 - A) Interchanging supply terminals
 - B) Interchanging armature winding terminals
 - C) Interchanging field terminals
 - D) Interchanging either armature or field terminals
44. The slip of an induction motor at the time of starting is
 - A) Infinity
 - B) Zero
 - C) One
 - D) Between zero and one
45. The stator winding of an induction motor can be designed for
 - A) Any number of poles
 - B) Any even number of poles
 - C) Any odd number of poles
 - D) Four poles
46. There is no electrical connection between stator and rotor yet power is transferred from stator to rotor through
 - A) Magnetic flux
 - B) Air
 - C) Water
 - D) Magnet
47. The rotor of squirrel cage induction motor is skewed because
 - A) It reduces humming thus ensuring quiet running of the motor
 - B) It results in a smoother torque curve for different positions of the rotor
 - C) It avoids the magnetic locking of the stator and rotor
 - D) All of the above
48. The power factor of an induction motor will be high when
 - A) Rotor is locked
 - B) Motor is running at full load
 - C) Motor is running at no load
 - D) All of the above
49. The frequency of the voltage generated in large alternators in India is
 - A) In megacycles
 - B) In kilocycles
 - C) 60 Hz
 - D) 50 Hz
50. The rating of alternators is usually expressed as
 - A) Full-load current
 - B) Horse power
 - C) KVA
 - D) KW
51. Synchronous motors are not self starting because
 - A) Starting can be used on these machines
 - B) Starting winding is not provided on these machines
 - C) The direction of rotation is not reversed
 - D) The direction is instantaneous, torque reverses after half cycle
52. A synchronous motor working on leading power factor at no-load is known as
 - A) Condenser
 - B) Synchronous condenser
 - C) Inverter
 - D) Converter
53. Operating speed of a synchronous motor can be changed to a new fixed value by
 - A) Changing the load
 - B) Changing the supply voltage
 - C) Changing the frequency
 - D) Using brakes
54. What kVA rating is required for a transformer that must handle a maximum current of 8A with a secondary voltage of 2kV?
 - A) 4 kVA
 - B) 0.25 kVA
 - C) 16 kVA
 - D) 8 kVA
55. Earthing arrangements for residential buildings should be inspected at an interval of
 - A) 3 months
 - B) 6 months
 - C) 9 months
 - D) 12 months
56. Maximum permissible earth resistance at large power stations is
 - A) 0.5 ohms
 - B) 1 ohm
 - C) 2 ohms
 - D) 8 ohms
57. The length of pipe electrode used for earthing should not be less than
 - A) 3.5 m
 - B) 4 m
 - C) 2.5 m
 - D) 5 m

58. Which effect causes by passing electric currents in liquids?
 A) Heating B) Lighting C) Magnetic D) Chemical
59. What is the function of fine selector switch in battery charger?
 A) Selection of current rating B) Selection of charging time
 C) Selection of voltage range D) Selection of charging method
60. Which part is losing electrons during electrolysis?
 A) Cathode B) Anode C) Electrolyte D) Separator
61. What is the fusing factor for rewirable fuse?
 A) 1.1 B) 1.4 C) 2.1 D) 2.5
62. Which type of load is protected by the L-series MCB?
 A) Motors B) Geysers C) Hand tools D) Air conditioners
63. What is the name of four insulated conductors group?
 A) Pair B) Core C) Quad D) Layer
64. Which is used as a filter material for fixing screw hole on ceiling?
 A) Paper B) Nylon C) Cement D) Poly vinyl chloride
65. What is the purpose of ELCB
 A) Detects the fault in the circuit B) Monitors the residual current
 C) Protects the equipment from overload D) Protects from short circuit fault
66. Calculate the earth fault loop impedance, if ELCB tripping current is 30 mA
 A) 166 Ω B) 1666 Ω C) 16.66 Ω D) 16666 Ω
67. Which wiring is suitable for temporary installation
 A) Cleat wiring B) Concealed wiring C) PVC conduit wiring D) Metal conduit wiring
68. What is the expansion of ECC
 A) Earth Conductor Continuity B) Earth Continuity Conductor
 C) Earth Carrying Conductor D) Earth Continuity Cable
69. Which type of lamp holder is used for the lamps above 300watts
 A) Edison screw holder B) Goliath screw holder C) Angle holder D) Bracket holder
70. What is the type of diagram



- A) Wiring diagram B) Circuit diagram C) Installation plan D) Layout diagram
71. What is the advantage of crimping?
 A) Gives neat appearance B) Reduce load current
 C) Avoid loose connections D) Easy to replace
72. What is the meggar reading in a dead short wiring installation
 A) 0 M Ω B) 1 M Ω C) 500 M Ω D) Infinity
73. What is the function of leak transformer in high pressure sodium vapour lamp circuit?
 A) Reducing the starting current B) Reduce the working voltage
 C) Increase the working voltage D) Ignite the high voltage initially
74. Which term refers the flow of light into a plane surface?
 A) Lumen B) Illuminance C) Luminous flux D) Luminous intensity

75. Which type of light fitting design has free from glare
 A) Semi direct type B) Semi indirect type C) Direct lighting type D) Indirect lighting type
76. Which device provides ignition voltage and act as choke in a HPSV lamp
 A) Arc tube B) Sodium vapour C) Leak transformer D) High pressure aluminium oxide
77. Which material is used to make control spring in measuring instruments
 A) Steel B) Silver C) Tinned copper D) Phosphor bronze
78. Source of measuring error caused by the effect of magnetic fields
 A) Device error B) Human error C) Influence error D) Switching error
79. Type of energy meter works with neutral connection
 A) Three phase two element B) Three phase three element
 C) Single phase single element D) Three phase two element with CT and PT
80. Parameter responsible for loading effect on measuring instruments
 A) Low accuracy B) High sensitivity C) Low sensitivity D) Low influence error
81. Name an absolute instrument
 A) Ammeter B) Voltmeter C) Energy meter D) Tangent galvanometer
82. Which force produces movement of pointer in an indicating instrument?
 A) Damping force B) Deflecting force C) Repulsion forced D) Controlling force
83. Calculate the value of shunt resistance required to measure 10 mA with one mA meter
 A) 3Ω B) 30Ω C) 0.3Ω D) 300Ω
84. Type of ac single phase motor used in food mixer
 A) Universal motor B) Repulsion motor C) Split phase motor D) Shaded pole motor
85. What is the function of stirrer motor in micro wave oven?
 A) Draws cooling air inside B) Spreads the heat uniformly
 C) Exhausts the hot air outside D) Revolves and reflects the electromagnetic energy
86. The property of material enables the formation of permanent deformation without fracture
 A) Elasticity B) Plasticity C) Ductility D) Brittleness
87. Metal used for making casting of machinery parts
 A) Grey cast iron B) White cast iron C) Malleable cast iron D) Wrought iron
88. Which among the following is an insulator?
 A) Copper B) Aluminium C) Silver D) Mica
89. Insulating material used for making switches
 A) Porcelain B) PVC C) Bakelite D) Ebonite
90. Unit for velocity is
 A) Meter/second B) Meter/second square C) Meter/minute D) Meter/hour
91. Ratio of power output to power input is called
 A) Work B) Energy C) Efficiency D) Acceleration
92. How many newtons are there in one kilogram
 A) 981 Newtons B) 98.1 Newtons C) 9.81 Newtons D) 0.981 Newtons
93. Instrument used to measure heat is known as
 A) Calorie meter B) Thermometer C) Pyrometer D) Barometer
94. Find the area of circle whose diameter is 50 cm
 A) 1900 cm^2 B) 1950 cm^2 C) 1962.5 cm^2 D) 1960 cm^2
95. Ratio of stress to strain is termed as
 A) Yield point B) Factor of safety C) Youngs modulus D) Poisson's ratio
96. What is the color of a metal piece when heated to 250 degrees Celsius while doing the tempering process?
 A) Blue B) Brown C) Purple D) Pale

97. What is the minimum permissible area of conductor (U/G cable) for three and half cores cable?
A) 25 mm² B) 50 mm² C) 5 mm² D) 100 mm²
98. The law that states within elastic limit stress is directly proportional to strain
A) Newtons law B) Hooks law C) Joules law D) Charles law
99. Various types of heat treatment processes are
A) Annealing, normalizing, hardening and tempering
B) Normalizing, heating, cooling and painting
C) Hardening, soaking, painting and packing
D) Tempering, cooling, packing and soling
100. Which is a kind of surface hardening process
A) Cementite B) Ferrite C) Nitriding D) Tempering

Electricity 'OP' Circle, Chandigarh

Post: Asstt. Lineman

Answer Key A-Series: 09.04.2023 (Sunday)

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	C	26	A	51	D	76	C
2	A	27	A	52	B	77	D
3	B	28	C	53	C	78	C
4	D	29	C	54	C	79	C
5	B	30	D	55	B	80	C
6	B	31	A	56	A	81	D
7	C	32	A	57	C	82	B
8	C	33	A	58	D	83	A
9	B	34	A	59	A	84	A
10	D	35	B	60	B	85	D
11	D	36	B	61	B	86	B
12	A	37	A	62	B	87	A
13	A	38	A	63	C	88	D
14	A	39	D	64	B	89	C
15	A	40	B	65	B	90	A
16	A	41	A	66	B	91	C
17	B	42	B	67	A	92	C
18	B	43	D	68	B	93	A
19	B	44	C	69	B	94	C
20	C	45	B	70	A	95	C
21	A	46	A	71	C	96	B
22	B	47	C	72	A	97	B
23	C	48	B	73	D	98	B
24	B	49	D	74	B	99	A
25	B	50	C	75	B	100	C