

MCQ

Trade Theory(2nd Year)



WIREMAN

2020

TRADE:- 2ND YEAR WIREMAN
TRADE THEORY
BASIC ELECTRONICS

1. A transistor has
A. One PN junction B. Two PN junction C. Three PN junction D. Four PN junction
2. How many PN junction are in PNP transistor ?
A. 4 B. 3 C. 2 D. 1
3. A power transistor is a.....
A. Three layer, three junction device B. Three layer, two junction device
C. . Two layer, one junction device D. Four layer, three junction device
4. Nos of diode connected back to back in a transistor.....
A. One B. One and a half C. Two D. None of these
5. The element that has a biggest size in a transistor is
A. Collector B. Emitter C. Base D. Collector-base-junction
6. The no of depletion layer in a transistor.....
A. Four B. Three C. One D. Two
7. The base of the transistor isdoped
A. Heavily B. Moderately C. Lightly D. None of these
8. Which layer of transistor is lightly doped ?
A. V_{cc} –terminal B. Emitter region C. Base region D. Collector region
9. The value of α of a transistor is
A. More than 1 B. Less than 1 C. 1 D. None of these
10. In a NPN transistor current carries from
A. Emitter B. Collector C. Base D. V_{cc}
11. Most of the electrons in the base of an NPN transistor flow.....
A, Out of the base lead B. Into to the collector
C. Into the emitter D. Into the base supply
12. In a transistor, collector current is controlled by.....
A. Collector voltage B. Base current
C. Collector resistance D. All of these
13. Total emitter current is.....
A. $I_E - I_C$ B. $I_C - I_E$ C. $I_B + I_C$ D. $I_B - I_C$
14. What are the ON/OFF terminals of a transistor when it is operated as switch ?
A. Collector to base B. Collector to emitter
C. Base to collector D. Emitter to base
- 15.. An SCR is made of
A. Germanium B. Silicon C. Carbon D. None of these
16. How many PN junctions are used in SCR ?
A. 4 B. 3 C. 2 D. 1
17. A silicon controlled rectifier (SCR) is a
A. Unijunction device B. Device with three junction
C. Device with four junction D. None of these
18. How many layers are there in in SCR ?
A. 2 B. 3 C. 4 D. 5
19. An SCR has three terminals viz.....
A. Cathode ,anode , gate B. Anode ,cathode , grid
C. Anode , cathode ,drain D. None of these

20. SCR is a.....
 - A. Unidirectional switch
 - B. Bidirectional switch
 - C. Four-directional
 - D. None of these
21. The control element of an SCR is.....
 - A. Cathode
 - B. Anode
 - C. Anode supply
 - D. Gate
22. An SCR can be tested for its condition with.....
 - A. An ohmmeter
 - B. A line tester
 - C. A voltmeter
 - D. An insulation tester
23. Which of the following device acts as an NPN and PNP transistor connected base to base and emitter to collector ?
 - A. UJT
 - B. SCR
 - C. Diac
 - D. Triac
24. The main application of SCR is.....
 - A. The speed control of motors
 - B. The voltage amplifier circuits
 - C. The filter circuit
 - D. The oscillator circuits
25. Which methods of triggering of SCR is used in an industrial controls?
 - A. Light triggering
 - B. Rate of change of voltage triggering
 - C. Gate triggering
 - D. Forward breakdown voltage triggering
26. The speed of AC motor using SCR can be controlled by varying.....
 - A. The holding current of SCR
 - B. The firing angle of the SCR
 - C. The load current
 - D. The gate current
27. Which of the following find applications in speed control of DC motor?
 - A. FET
 - B. NPN transistor
 - C. SCR
 - D. None of these
28. How many terminals are in a DIAC?
 - A. 4
 - B. 3
 - C. 2
 - D. 1
29. The DIAC is mainly used as a
 - A. Triggering device
 - B. Switching device
 - C. Signal device
 - D. Power controlled device
30. The terminals of TRIAC is
 - A. Base, emitter, collector
 - B. Anode, cathode, gate
 - C. Source, drain, gate
 - D. MT₁, MT₂ and gate
31. What is the application of TRIAC?
 - A. It is used for triggering
 - B. It is used for controlling AC in either direction
 - C. It is used to square pulse
 - D. It is used as inverter, converting AC to DC
32. The application of UJT is
 - A. Filter circuit
 - B. Power amplifier
 - C. Relaxation oscillator
 - D. Sinusoidal oscillator
33. Which of the following is a voltage controlled device?
 - A. SCR
 - B. FET
 - C. BJT
 - D. UJT
34. FET is also known as
 - A. Bi-polar transistor
 - B. Unipolar transistor
 - C. Current controlled device
 - D. Power controlled device
35. JFET stands for
 - A. Joint field effect transistor
 - B. Junction field effect transistor
 - C. Junction function effect transistor
 - D. None of these
36. MOSFET is also called as.....
 - A. Insulated gate FET
 - B. Junction field effect transistor
 - C. Dual gate MOSFET
 - D. V- MOSFET
37. The three terminals of power MOSFET.....
 - A. Collector, emitter, base
 - B. Drain, source, base
 - C. Drain, source, gate
 - D. Collector, emitter, gate
38. Which of the following transistors are affected by static electricity?
 - A. UJT
 - B. FET
 - C. MOSFET
 - D. NPN transistor

39. IGBT stands for
 - A. Integrated Gate Bidirectional Transistor
 - B. Integrated Gate Bipolar Thyristor
 - C. Insulated Gate Blocking Transistor
 - D. Insulated Gate Bipolar Transistor
40. IGBT is a.....
 - A. Current controlled device B. Phase controlled device
 - C. Voltage controlled device D. Frequency controlled device
41. One of the application of IGBT is.....
 - A. Inverter B. Multi vibrators C. Amplifiers D. Loud speaker
42. The following is a bi-polar device.....
 - A. IGBT B. GTO C. Both A & B D. None of these
43. The term IC is used in electronics denotes.....
 - A. Internal combustion B. Integrated circuit
 - C. Industrial control D. Indian culture
44. IC generally made of
 - A. Silicon B. Germanium C. Copper D. None of these
45. The active component in IC are.....
 - A. Resistor B. Capacitor C. Transistor and diodes D. None of these.

ANSWER: Basic Electronics

1. B 2.C 3.B 4.C 5.A 6.D 7.C 8.C 9.B 10.A 11.B 12.B 13.C 14.B 15.B 16.B 17.B
 18.C 19.A 20.A 21.D 22.A 23.B 24.A 25.C 26.B 27.C 28.C 29.A 30.D 31.C 32.C
 33.B 34.B 35.B 36.A 37.C 38.C 39.D 40.C 41.A 42.C 43.B 44.A 45.C

DC MACHINE

1. Generator converts mechanical energy into
 - A. Electrical energy
 - B. Solar energy
 - C. Chemical energy
 - D. Wind energy
- 2: A DC generator works on the principle of.....
 - A. Faradays law of electrolysis
 - B. Fleming's left hand rule
 - C. Lenz's law
 - D. Faradays laws of electromagnetic induction
- 3: How many laws are there in faradays laws of electromagnetic induction?
 - A. 1
 - B. 2
 - C. 3
 - D. 4
- 4: When the coil moves at right angle to the magnetic flux, the induced emf will be.....
 - A. Oscillating
 - B. Minimum
 - C. zero
 - D. Maximum
- 5: The formula of dynamically induced emf.....
 - A. BLV volts
 - B. $BLV \sin \phi$ volts
 - C. $BLV \cos \phi$ volts
 - D. $BL \sin \phi$ volts
- 6: THE emf produced in the dc generator is.....
 - A. Statically
 - B. Dynamically
 - C. Magnetically
 - D. Electrostatically
- 7: By which law the direction of the induced e.m.f will be identified?
 - A. Faradays first law of electromagnetic induction
 - B. Faradays second law of electromagnetic induction
 - C. Lenz's law
 - D. Flemings right hand rule
- 8: Fleming's right hand rule is to identify the.....
 - A. Direction of flux
 - B. Direction of rotation of generator
 - C. Direction of current in a motor
 - D. Direction of induced EMF
- 9: By which material the yoke is made up of small DC generator ?
 - A. Mild steel
 - B. High speed steel
 - C. Cast iron
 - D. Wrought iron
- 10: Body or yoke of a DC generator is made of.....
 - A. Cast iron
 - B. Cast steel
 - C. Rolled steel
 - D. All of these
- 11: Laminated core are generally made of.....
 - A. Cast iron
 - B. Carbon
 - C. Silicon steel
 - D. Stainless steel
- 12: The field coils of DC generator are usually made of.....
 - A. Mica
 - B. Copper
 - C. Cast iron
 - D. Carbon
- 13: The residual magnetism is available in.....
 - A. Armature winding
 - B. Shunt field
 - C. Commutator
 - D. Pole shoe tip
- 14: The armature core laminated sheet steel disc thickness is.....
 - A. 0.3mm
 - B. 0.4mm
 - C. 0.5mm
 - D. 0.6mm
- 15: The armature core of DC generator is laminated to.....
 - A. Reduced the bulk
 - B. Provide the bulk
 - C. Insulate the core
 - D. Reduce eddy current loss
- 16: The split ring in a generator is made up of.....
 - A. Iron
 - B. Steel
 - C. Hard drawn copper
 - D. Nickel
- 17: Commutator in DC generator is used for.....
 - A. Collecting the current
 - B. Reduce losses
 - C. Convert AC armature current into DC
 - D. Increase efficiency

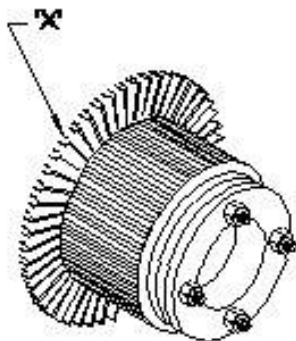
- 18: The commutator segments are insulated from each other by thin layer of.....
 A. Paper B. Mica
 C. Empire cloth D. Millinex paper
- 19: The resistance of armature winding depends on.....
 A. Length of the conductor B. Cross section area of the conductor
 C. Number of conductor D. All of these
- 20: The commutator segments are connected to the armature conductor by means of.....
 A. Copper lug B. Resistance wire
 C. Insulating pads D. Brazing
- 21: In a DC generator the no. of segments in commutator is equal to the number of
 A. Pole B. Armature coils
 C. Parallel path D. Brushes
- 22: In which material the brushes are made ?
 A. Bronze B. Gunmetal
 C. Carbon and graphite D. Zinc chloride
- 23: The function of brushes in a DC generator.....
 A. Convert AC into uni-directional current B. Collect the current from the commutator
 C. Increase the magnetic flux D. Connect the armature and commutator
- 24: The main two types of winding used in the armature of a DC generator are
 A. Lap winding B. Wave winding
 C. Field winding D. Both A & B
- 25: How many parallel paths in 6 pole, simplex lap wound armature in a DC generator is
 A. 4 B. 6 C. 8 D. 12
- 26: The number of parallel paths simplex wave winding of DC generator is.....
 A. 6 B. 4 C. 2 D. 1
- 27: The induced emf of DC generator is proportional to.....
 A. Field flux only B. Speed of armature only
 C. Number of conductors D. All of these
- 28: Which type of source is not used for separate excitation?
 A. Storage battery B. Solar
 C. DC generator D. Rectified DC
- 29: In the generator the excitation voltage will be of low voltage of as.....
 A. 24V B. 20V C. 18V D. 15V
- 30: In a separately excited DC generator the field is connected to.....
 A. In series with the armature B. Across the armature
 C. To the external supply source D. None of these
- 31: Field voltage is independent of armature current in a
 A. Self-excited DC generator B. Self-excited series field DC generator
 C. Self-excited shunt field DC generator D. Separately excited DC generator
- 32: In a self-excited generator, the excitation is provided by
 A. Its armature B. Its field C. Battery D. Another generator
- 33: In a generator the initial flux is produced due to.....
 A. Saturation of core B. Residual magnetism
 C. Eddy current D. Hysteresis
- 34: A DC generator is connected to a rated load. The load current flows through which winding of the generator?
 A. Field winding B. Armature winding C. Both A & B D. Either A & B
- 35: The shunt field of DC generator will have.....
 A. Zero resistance B. Medium resistance C. Low resistance D. High resistance
- 36: Which of the following generators have two field windings.....
 A. Series wound generator B. Shunt wound generator
 C. Compound wound generator D. All of these
- 37: The application of DC shunt generator is.....
 A. Welding generator set B. Booster
 C. Electroplating D. Electro traction

- 38: DC series generator is used
 A. To supply traction load B. To supply industrial load at constant voltage
 C. Voltage at the load end of the feeder D. For none of the above purpose
- 39: The no load characteristics curve drawn between.....
 A. Field current vs induced voltage B. Armature current vs induced voltage
 C. field current vs armature current D. Armature current vs terminal voltages
- 40: The load characteristics of separated excited generator is between
 A. Armature current and emf B. Armature current and terminal voltage
 C. Load current and terminal voltage D. Field current and terminal voltage
- 41: The terminal voltage of DC shunt generator on loading.....
 A. Increase slightly B. Decrease sharply C. Decrease slightly D. increase sharply
- 42: Which one of the following is the application of over compound DC generator
 A. Electroplating B. Railways C. Welding generator D. Lathe
- 43: For DC welding sets, the following DC generator are brought In practice.....
 A. Shunt field B. Level compound C. Differential compound D. Over compound
- 44: In an arc welding in order to obtain steady arc one should use
 A. DC series generator B. DC shunt generator C. DC differential compound generator D. DC cumulative compound generator
- 45: In a DC machine , brushes are placed
 A. Along geometrical neutral axis B. Along magnetic neutral axis
 C. Between two adjacent pole D. All of these
- 46: Demagnetizing component of armature reaction is.....
 A. In phase opposition of main field MMF B. In phase with main field MMF
 C. Perpendicular to main field MMF D. In phase with cross reaction components
- 47: The Cross magnetizing component of armature reaction is.....
 A. All right angle to the main field MMF B. Changing direction of main field fluxes
 C. At right angle to the demagnetizing component D. All of these
- 48: The armature reaction in DC machine causes distortion in the main field flux. This effect of armature reaction can be produced by
 A. Increasing the length of air gap B. Decreasing the length of air gap
 C. Increasing the number of poles D. Decreasing the number of poles
- 49: The field winding of inter pole of a DC compound generator is connected.....
 A. In series with armature B. In series with shunt winding
 C. In parallel with shunt winding D. In parallel with armature
- 50: Inter pole windings may be used in DC machine to.....
 A. Reduce eddy current losses in pole pieces B. Provide more field fluxes
 C. Reduce rough commutation D. Increase armature reaction
- 51: The efficiency of DC machine is maximum when.....
 A. Iron losses are equal to mechanical losses B. Variable losses are equal to constant losses
 C. Field copper losses are equal to constant losses D. Stray losses are equal to copper losses
- 52: Which one is the main condition for parallel operation.....
 A. The capacity of both generators must be same B. The field critical resistances must be same
 C. The polarity of both generators must be same D. None of the above
- 53: For parallel operation the generator normally preferred are.....
 A. Series generator B. Shunt generator
 C. Compound generator D. Series and shunt generator
- 54: DC motor works on the principle that the.....
 A. current carrying conductor placed in uniform magnetic field experienced a force on it
 B. Conductor moves when kept in a uniform magnetic field
 C. Magnetic field set up by varying current which produces force in the conductor
 D. None of these
- 55: DC motor can be recognized easily by.....
 A. Slip ring B. Armature C. Winding D. Commutator
- 56: When the armature of a DC motor rotates, emf induced is.....

- A. Self induced emf B. Back emf C. Mutually induced emf D. None of these
- 57: The emf induced in a DC motor while running is to.....
- A. Assist the applied voltage B. Oppose the applied voltage
C. Decreased the current D. Increase the current
- 58: The armature torque of the DC series motor is directly proportional to
- A. Armature current B. Supply voltage C. Speed D. Efficiency
- 59: A series motor
- A. Should always be started on load B. Always run with constant speed
C. Is not suitable for high starting torque D. May "run away" if the field gets opened
- 60: Which types of DC motor is used in hoists and cranes ?
- A. DC series motor B. DC shunt motor C. DC cumulative motor D. DC compound motor
- 61: Which types of motor would you choose for starting the transport vehicles ?
- A. DC series motor B. DC shunt motor
C. Cumulative compound DC motor D. Differential compound DC motor
- 62: Which of the following motor is never allowed to run on no load even accidentally ?
- A. Shunt motor B. B Series motor
C. Compound motor D. Eddy current motor
- 63: Motor used in electric traction is.....
- A. DC compound B. DC shunt
C. DC series D. DC long shunt compound
- 64: Which types of DC machine is used for elevators?
- A. DC shunt motor B. DC series motor
C. DC cumulative compound motor D. DC differential compound motor
- 65: A DC series motor is not suitable for
- A. Traction B. Cranes and hoists
C. Centrifugal pump D. Lifts
- 66: No load speed of which of the following motor will be highest ?
- A. Shunt motor B. Cumulative compound motor
C. Series motor D. Differential compound motor
- 67: DC shunt motor are commonly used in
- A. Cranes B. Electric traction
C. Elevator D. Lathe machine
- 68: DC shunt motor are also called as.....
- A. Constant flux motor B. Constant voltage motor
C. Variable voltage motor D. Constant current motor
- 69: For same HP rating and full load speed which of the following motor has poor starting torque ?
- A. Series B. Shunt
C. Differentially compound D. Cumulative compound
70. In a DC compound motor field regulator is provided to.....
- A. Control the flux B. Limit the ampere current
C. Demagnetize the field partially D. None of these
- 71: In a DC motor the condition for maximum power is.....
- A. Supply voltage = $\frac{1}{2}$ * back emf B. Supply voltage = 4 * back emf
C. Back emf = 2 * supply voltage D. Back emf = $\frac{1}{2}$ * supply voltage
- 72: Differentially compound DC motor can find application requiring.....
- A. High starting torque B. Low starting torque
C. Variable speed D. Frequent on –off cycle
- 73: In DC motor three point or four point starter is used to.....
- A. Increase the starting current B. Reduce the starting current
C. Protect the motor from over load D. Both B & C
- 74: The two point starter is frequently used with
- A. DC shunt motor B. DC series motor
C. DC short shunt compound motor D. DC long shunt compound motor
- 75: To start a DC shunt motor the types of starter used is

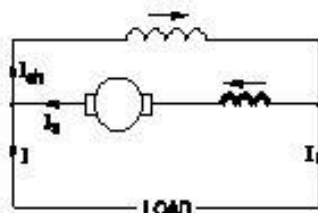
- A. 2 point B. 3 point C. 4 point D. Drum type
- 76: Starting of DC motor using 3 point and 4 point starter differs in the connection of.....
 A. Overload release coil B. No- volt release coil
 C. Armature supply D. Field supply
- 77: In a 4 point starter the protective resistor is connected in series with.....
 A. Over load coil B. No volt coil C. Armature D. Shunt field
- 78: The speed of a DC motor is.....
 A. Always constant B. Directly proportional to back emf
 C. Directly proportional to flux D. Directly proportional to the product of back emf and flux
- 79: With increase in the speed of a DC motor.....
 A. Back emf as well as line current increase B. Both back emf and line current fall
 C. Back emf increases but the line current falls D. Back emf falls and line current increase
- 80: What will happen to the speed of the DC shunt motor ,When the flux is increased ?
 A. Increased B. Remain constant C. Decreased D. Fluctuate
- 81: Which method of speed control is mainly applied in electric trains ?
 A. Series field tapping method B. Series field diverter method
 C. Series parallel method D. Supply voltage control method
- 82: What will happen if back emf of a DC motor vanishes suddenly ?
 A. The motor will stop B. The will continue to run
 C. The armature may burn D. The motor will run noisy
- 83: When a DC series motor is connected to AC supply , What will happen to the motor ?
 A. Reversal direction of rotation B. Does not run
 C. Heavy sparking in the commutator and becomes hot due to armature reaction
 D. Nothing happens
- 84: A 220V DC motor having an armature resistance 0.2 ohms and back emf 215V, it draws a current of.....
 A. 15amps B. 20 amps C. 25 amps D. 50amps
- 85: The starting current of a 220V , 10HP shunt motor having an armature resistance of 0.2 ohms, without starter is
 A. 11amps B. 110 amps C.1100 amps D. 11000 amps

86. What is the name of the part marked as 'X' in DC generator given below?



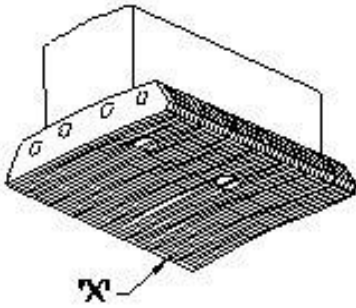
A - Armature core B -Brush C- Commutator raiser D -Commutator segment

87. What is the name of D.C generator given below?

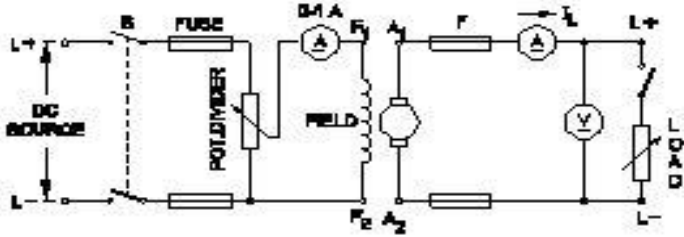


A- Differential long shunt compound B- Differential short shunt compound

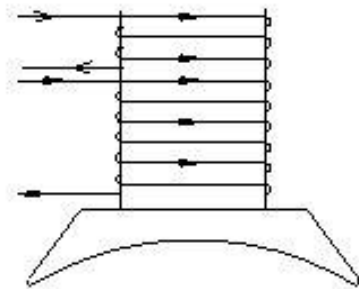
- C -Cumulative long shunt compound D -Cumulative short shunt compound
88. What is the name of the part marked 'X' in DC generator given below?



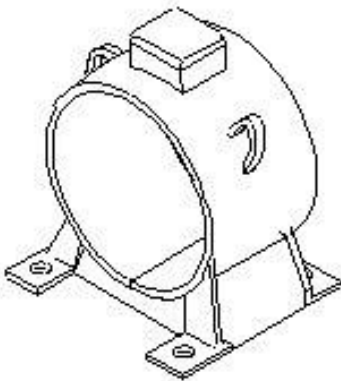
- A -Pole tip B -Pole coil C -Pole core D -Pole shoe
89. What is the name of the D.C generator given below?



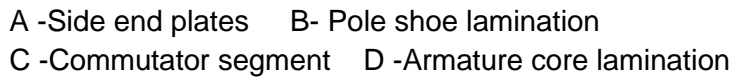
- A -Shunt generator B -Series generator
- C- Compound generator D -Separately excited generator
90. What is the name of D.C generator field given below?



- A -Short shunt compound generator B -Long shunt compound generator
- C -Differential compound generator D -Cumulative compound generator
91. What is the name of the part of DC generator given below?



- A- Stator B -Pole core C -Pole shoes D -Yoke (or) frame
92. Name the part of DC generator given below?



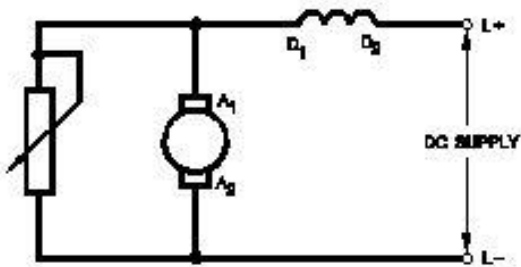
A -Full load voltage drop B- Armature voltage drop
C -Armature reaction drop D- Shunt field voltage drop

A- Maintain constant voltage B- Nullifying statically induced emf
C -Increasing statically induced emf D -Smooth reversal of current direction

A diagram showing a fan-shaped structure composed of several rectangular segments radiating from a central point labeled 'x'. The segments are arranged in a semi-circular arc, with a dashed line indicating the inner boundary of the fan.

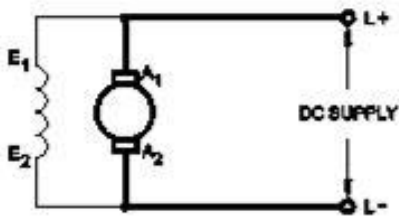
A- To fix the key way B -To make air circulation
C- For lubrication purpose D- For easy removal from shaft

96. What is the name of the speed control method of DC motor given below?

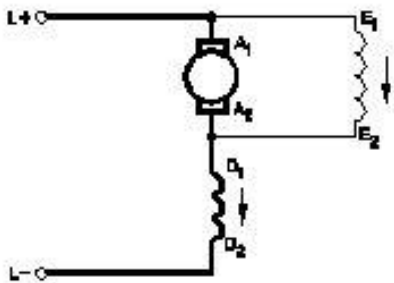


- A- Field diverter method B- Field tapping method
C- Voltage control method D- Armature diverter method

97. What is the name of D.C motor given below?

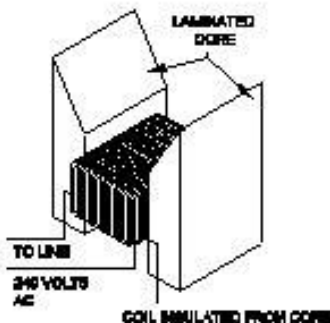


- A- D.C shunt motor B- D.C series motor
C- D.C differential compound motor D- D.C cumulative compound motor
98. Name the type of DC motor.



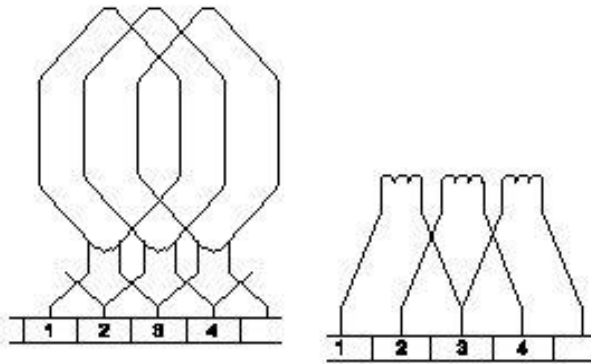
- A- Shunt motor B- Series motor
C- Long shunt compound motor D- Short shunt compound

99. What is the name of the equipment given below?



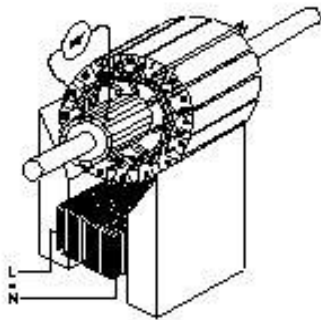
- A- Megger B- Earth resistance tester C- Internal growler D- External growler

100. Which type of armature winding is illustrated given below?



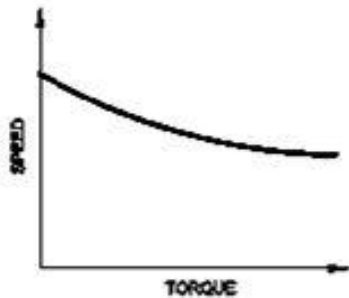
- A- Duplex lap winding B -Triplex lap winding
C -Simplex lap winding D -Quadruplex lap winding

101. Which growler test for armature is illustrated given below?



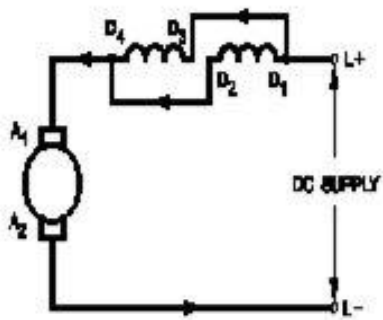
- A -Open coil test B- Grounded coil test C -Shorted coil test D- Shorted commutator test

102. Which motor has this characteristics curve given below?



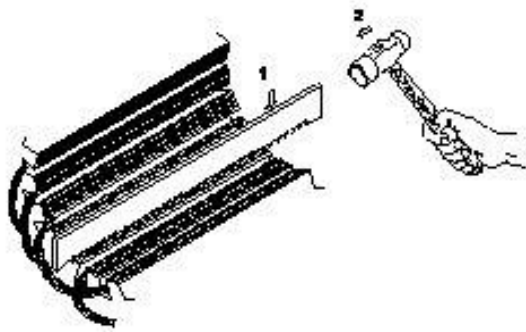
- A- Series motor B- Shunt motor
C- Cumulative compound motor D- Differential compound motor

103. Which type of speed control of D.C series motor given below?

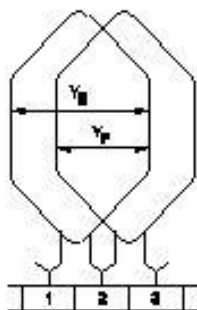


- A- Field parallel method B- Field diverter method
C- Field tapping method D- Armature diverter method

104. What is the operation in the rewinding process given below?

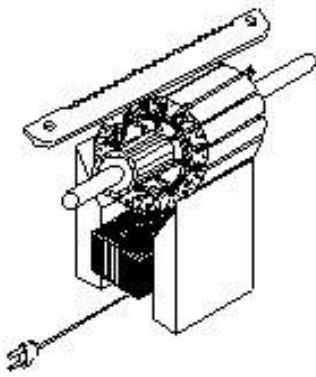


- A. Cleaning of slots B. Removing of winding
C. Removing of wedges D. Cutting of winding wire
105. Which type of armature winding is illustrated given below?



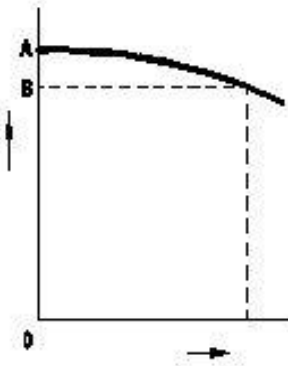
- A Triplex wave winding B Duplex wave winding
C Progressive lap winding D Retrogressive lap winding

106. Why the newly rewound armature must be preheated before varnishing given below?



- A- Drive out the moisture from it
- B- Help for quick drying of varnish
- C- Make easy to penetrate varnish inside
- D- Maintain uniform spreading of varnishing

107. What is the reason for reduction in speed of a D.C shunt motor from no load to full load given below?



- A- Shunt field current increases
- B- Shunt field current decreases
- C- Armature voltage drop increases
- D- Armature voltage drop decreases

ANSWER: DC MACHINE

1.A 2.D 3.B 4.D 5.B 6.B 7.D 8.D 9.C 10.D 11.C 12.B 13.B 14.C 15.D 16.C
 17.C 18.B 19.D 20.A 21.B 22.C 23.B 24.D 25.B 26.C 27.D 28.B 29.A 30.C
 31.D 32.B 33.B 34.B 35.D 36.C 37.C 38.C 39.A 40.C 41.C 42.B 43.C 44.C 45.B
 46.A 47.D 48.A 49.A 50.C 51.B 52.C 53.B 54.A 55.D 56.B 57.B 58.A 59.B 60.A
 61.A 62.B 63.C 64.C 65.C 66.C 67.D 68.A 69.C 70.A 71.D 72.B 73.D 74.B 75.B
 76.B 77.B 78.B 79.C 80.C 81.B 82.C 83.C 84.C 85.C 86.C 87.A 88.D 89.D 90.C
 91.D 92.D 93.C 94.D 95.A 96.D 97.A 98.D 99.D 100.A 101.A 102.C 103.A 104.C 105.C 106.A
 107.C

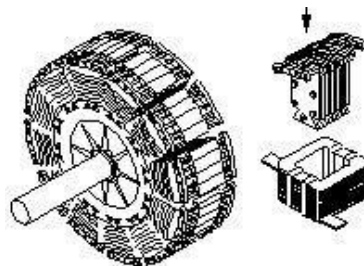
ALTERNATOR

1. Alternator converts.....
 - A. Mechanical energy to electrical energy
 - B. Electrical energy to mechanical energy
 - C. AC TO DC
 - D. DC TO AC
2. The law of basic principle of alternator is.....
 - A. Flemings right hand law of emf
 - B. . Flemings left hand law of force
 - C. Faradays laws of electromagnetic induction
 - D. lenz's law
3. The DC and AC generators are similar in one important function . That is the
 - A. Generated emf is a direct current
 - B. Generated emf is an alternating current
 - C. Generated emf is a pulsating current
 - D. Generated emf is an oscillating current
4. The field current of an alternator is supplied with.....
 - A. Oscillating current
 - B. Direct current
 - C. Alternating current
 - D. Pulsating current
5. The main parts of an alternator are.....
 - A. Stator, Rotor & Exciter
 - B. Armature and commutator
 - C. Wound rotor
 - D. Synchronous
6. The three phase armature winding are electrically apart by an angle of.....degree
 - A. 90
 - B. 120
 - C. 180
 - D. 270
7. In a three phase alternator ,the three sets of coils are connected in.....
 - A. Star
 - B. Delta
 - C. Series
 - D. Both A&B
8. Practically in most of the alternators which types of construction is preferred.....
 - A. Rotating field type
 - C. Rotating armature type
 - C. Both are equally important
 - D. None of these
9. The statement that is true about an alternator.....
 - A. Field winding is placed on the rotor , while armature winding is placed on the stator.
 - B. Armature winding has more diameter than field winding.
 - C. Rotor is driven by a prime mover
 - D. All of these
10. How the generated AC is connected to the load in a stationary magnetic field type alternator ?
 - A. Through split ring
 - B. Directly through terminal connection
 - C. Through commutator
 - D. Through slip rings
11. Slip rings are usually made of.....
 - A. Copper
 - B. Carbon
 - C. Phosphor bronze
 - D. Aluminium
12. A 3 phase ,delta connected alternator having a rotating armature will have.....
 - A. 2 slip rings
 - B. 3 slip rings
 - C. 4 slip rings
 - D. 6 slip rings
13. A 3 phase ,star connected alternator having a rotating armature will have.....
 - A. 2 slip rings
 - B. 3 slip rings
 - C. 4 slip rings
 - D. 6 slip rings
14. How many numbers of slip rings are required for a rotating field type 3 phase alternator ?
 - A. 6
 - B. 2
 - C. 3
 - D. 12
15. What is features of salient pole type rotor used in an alternator ?
 - A. Smaller in length and large in diameter
 - B. Smaller in diameter and larger in length
 - C. Smaller in diameter and smaller in length
 - D. Larger in diameter and larger in length
16. A larger diameter of alternator is running at slow speed will be having.....
 - A. Rotating alternator
 - B. Rotating field with a smooth cylindrical rotor
 - C. Rotating field with a salient pole rotor
 - D. Rotating armature with field
17. The advantage of salient pole in an alternator is.....
 - A. Reduce noise
 - B. Reduce windage loss
 - C. Adoptability to low and medium speed operation
 - D. Reduce bearing loads and noise
18. The air gap in salient pole machine is
 - A. Maximum at the center of pole
 - B. Least at the center of the pole and increase while moving away from the center

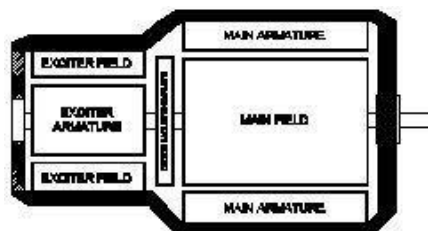
- C. Maximum at the center of the pole and decrease while moving away from the center
D. Equally distributed
19. Following is true about a cylindrical rotor alternator.....
 - A. Poles are projecting outside
 - B. Damper winding are required
 - C. Noise free operation
 - D. Suitable for slow speed hydro- generator
 20. The salient pole type rotor speed range is from.....
 - A. 1000-1500 rpm
 - B. 1000-2000 rpm
 - C. 1000-2500 rpm
 - D. 1000-3000 rpm
 21. The advantage of providing damper winding in alternator is
 - A. Eliminate of harmonic effects
 - B. Provide a low resistance path for the current due to unbalancing of current
 - C. Oscillations are provided when two alternators operation in parallel
 - D. All of the above
 22. The relation between frequency , speed and number of pole in alternator is given by.....
 - A. $f = PN/60$
 - B. $f = PN/120$
 - C. $f = PN/2$
 - D. $f = P*60/N$
 23. The common generated frequency in India is.....
 - A. 60Hz
 - B. 55Hz
 - C. 50Hz
 - D. 45Hz
 24. What is the number of poles ,if the speed is 3000 rpm ,and frequency is 50Hz of an alternator ?
 - A. 4
 - B. 2
 - C. 6
 - D. 8
 25. Find the number of cycles per second of a 6 pole alternator, running at 1000rpm.
 - A. 50 cycles /sec
 - B. 60 cycle/sec
 - C. 70 cycle/sec
 - D. 75 cycle/sec
 26. An alternator is designed to have a frequency of 50c/s.it has 8 pole . What is the speed of the alternator ?
 - A. 650 rpm
 - B. 700 rpm
 - C. 750 rpm
 - D. 800 rpm
 27. The frequency of 6 pole alternator , running at 1500 rpm is
 - A. 75 Hz
 - B. 60 Hz
 - C. 50 Hz
 - D. 40Hz
 28. The frequency of voltage generated by an alternator having 8 pole and rotating at 250rpm is.....
 - A. 60 Hz
 - B. 50 Hz
 - C. 25 Hz
 - D. $16 \frac{2}{3}$ Hz
 29. The speed of a 6 pole 50Hz alternator is.....
 - A. 1800rpm
 - B. 1200 rpm
 - C. 1000 rpm
 - D. 600 rpm
 30. A ten pole alternator rotates at a constant speed of 1200 rpm .The periodic time of voltage in second per cycle will be.....
 - A. 0.01
 - B. 0.02
 - C. 0.04
 - D. 0.08
 31. The form factor in EMF equation of a 50 Hz alternator is
 - A. 0.637
 - B. 0.707
 - C. 1.11
 - D. 1.414
 32. In an alternator at what power factor the effect of armature reaction is cross magnetizing?
 - A. at 0.8 PF
 - B. at 0.5 PF
 - C. at zero PF
 - D. at unity PF
 33. In an alternator at what power factor the effect of armature reaction is de- magnetizing ?
 - A. at 0.8 pf
 - B. at 0.5 pf
 - C. at zero pf
 - D. at unity pf
 34. When the input to the prime mover of a alternator is constant but excitation of the is changed then It changes is
 - A. KW
 - B. KVA
 - C. Power factor
 - D. Both B & C
 35. Voltage drop in an alternator when under load is due to.....
 - A. Armature resistance
 - B. Armature reactance
 - C. Armature reaction
 - D. all of these
 36. In an alternator , voltage drop occurs in.....
 - A. Armature resistance only
 - B. Armature resistance and leakage reactance
 - C. Armature resistance , leakage reactance and armature reaction
 - D. Armature resistance , leakage reactance , armature reaction and earth
 37. The magnitude of various voltage drops that occur in an alternator , depends on.....
 - A. Power factor of the load
 - B. Load current
 - C. Power facto*load current
 - D. . Power facto*(load current)²
 38. How the load is increased on an alternator ?
 - A. Increasing fuel
 - B. Increasing exciting current
 - C. . Increasing speed
 - D. . Increasing fuel and exciting current
 39. The maximum current can be supplied by alternator depends on its

- A. Speed B. No of poles C. Strength of the magnetic field D. All of these
40. What are the advantages of parallel operation of alternator ?
 A. Increase in reliability B. Increase in efficiency under light load
 C. Continuity in supply is maintained D. All of these
41. Paralleling of alternator is done when.....
 A. Voltage are equal B. Phase sequence are same
 C. Frequency are same D. All of these
42. Methods of synchronization of alternator can be achieved by one or more of the following methods.....
 A. Dark lamp method B. Bright lamp method
 C. Synchroscope Method D. All of these
43. In the bright lamp method of synchronizing two alternators, incoming alternator is put on the bus when
 A. One bulb is bright, two bulbs are dark B. **Two bulbs are bright** , one bulb is dark
 C. Two bulbs are bright, two bulbs are black D. Three bulbs are bright
44. When two alternators are operating in parallel and at perfect synchronization, their synchronizing power will be.....
 A. Negative B. Infinity C. Positive D. Zero
45. Which instrument is used to indicate the correct time for synchronization of two alternator ?
 A. Phase sequence meter B. Synchroscope
 C. Power factor meter D. Tachometer
46. Calculate the percentage voltage regulation of the alternator , when its terminal voltage rises from 210 volts at full load to 220volt at no load.
 A. 4.76% B. 4.65% C. 4.54% D. 3.75%
47. The alternators are rated as
 A. KW B. KVAR C. KVA D. KWH
48. The power factor of an alternator depends on.....
 A. Load B. Speed of rotor C. Core losses D. Armature losses
49. Cooling medium for large size alternators may be.....
 A. Air B. Hydrogen C. Water D. All of these
50. Which materials used for wiring continuous bus bar.....
 A. Aluminum B. Copper C. Both A & B D. None of these

51.. What is the name of the part of alternator?



- A) Stator B) Exciter C) Salient pole rotor D) Smooth cylindrical rotor
52. What is the type of alternator?



- A) Brush less alternator B) Three phase alternator
 C) Single phase alternator D) Salient pole type alternator

ANSWER: ALTERNATOR

1. A 2. C 3. B 4. B 5. A 6. B 7. D 8. A 9. D 10. D 11. C 12. B 13. C 14. B 15. A 16. C 17. C 18. B 19. C
20. D 21. D 22. B 23. C 24. B 25. A 26. C 27. A 28. D 29. C 30. A 31. C 32. D 33. C 34. D 35. D 36. C
37. B 38. D 39. D 40. D 41. D 42. D 43. B 44. B 45. B 46. A 47. C 48. A 49. D 50. A 51. C 52. A

SYNCHRONOUS MOTOR

1. Which one of the 3 phase motor is not self starting ?
A. Synchronous motor
B. Squirrel cage induction motor
C. Wound rotor motor
D. Double cage motor
2. The purpose of damper winding used in the synchronous motor is to
A. Increase the ampere turn in field winding
B. Start the synchronous motor
C. Increase the efficiency of the synchronous motor
D. Increase the excitation of field circuit
3. A synchronous motor can be started by.....
A. Pony motor
B. DC compound motor
C. By providing damper winding
D. Any of these
4. A three phase synchronous machine will have Rings
A. No
B. 1
C. 2
D. 3
5. Which one of the following characteristic is NOT applicable to synchronous motors ?
A. Runs at constant speed at all load
B. Suitable to supply only mechanical
C. Can also be used for PF improvement
D. Not self starting
6. In asynchronous generator , if the mechanical input is increased ,with constant excitation ,the load Angle will be
A. Increase
B. Decrease
C. Either increase or decrease
D. None of these
7. Which one of the following is the application of synchronous motors ?
A. Crain
B. Hoist
C. Power factor correction device
D. Welding generator set
8. Power factor can be improve by.....
A. Static capacitor
B. Synchronous condenser
C. Phase advancer
D. All of these
9. The motor suitable for load where constant speed is required is.....
A. Induction motor
B. Synchronous motor
C. Phase advancers
D. All of these
10. In the motor generator set the types AC motor used is
A. Squirrel case induction motor
B. Wound rotor induction motor
C. AC commutator motor
D. Synchronous motor
11. A synchronous motor can develop synchronous torque
A. When under loaded
B. When over excited
C. Only at synchronous speed
D. Below or above synchronous speed
12. The maximum power developed In the synchronous motor will depends on.....
A. Rotor excitation only
B. Maximum value of coupling angle
C. Supply voltage only
D. All of these
13. When load on a synchronous is increased its armature current is increased provided it is

- A. Normally excited B. Over excited C. Under excited D. All of these
14. Synchronous motor can be used as power factor improvement device when.....
 A. Running at lagging PF B. Running at unity PF
 C. Running at leading PF D. None of these
15. Synchronous motor can operate at.....
 A. Lagging PF only B. Leading PF only
 C. Unity PF only D. Lagging ,Leading and Unity PF only
16. In case the field of a synchronous motor is under excited , the PF will be
 A. Leading B. Lagging C. Zero D. Unity
17. An over excited synchronous motor works at.....
 A. Unity PF B. Lagging PF C. Leading PF D. Torque pull out
18. The damping winding in asynchronous motor is generally used
 A. To provide starting torque B. To provide noise only
 C. To reduce eddy currents D. To prevent hunting and provide the starting torque
19. In a synchronous motor the damper winding is provided to.....
 A. Stabilize rotor motion B. Suppress rotor oscillation
 C. Develop necessary starting torque D. Both B & C
20. The back emf set up in the stator of a synchronous motor will depends on
 A. Rotor speed only B. Rotor excitation only
 C. Rotor excitation and rotor speed D. Coupling angle, rotor speed and excitation
21. In a synchronous generator V curve is drawn between.....
 A. Field current on X-axis and armature current on Y-axis
 B. Field current on Y-axis and armature current on X-axis
 C. Field current on Y-axis and PF current on X-axis
 D. Field current on X-axis and PF current on Y-axis
22. The percentage slip in case of a synchronous motor is
 A) 1% B) 100% C) 0.5% D) Zero
23. A synchronous motor will always stop when
 A) Supply voltage fluctuates B) Load in motor varies
 C) Excitation winding gets disconnected D) Supply voltage frequency changes
24. Hunting in a synchronous motor takes place
 A) When supply voltage fluctuates B) When load varies
 C) When power factor is unity D) Motor is under loaded
25. In which of the following motors the stator and rotor magnetic field rotate at the same speed ?
 A) Universal motor B) Synchronous motor
 C) Induction motor D) Reluctance motor
26. A synchronous motor working at leading power factor can be used as
 A) Voltage booster B) Phase advancer
 C) Noise generator D) Mechanical synchronizer
27. An over excited synchronous motor is used for
 A) Fluctuating loads B) Variable speed loads
 C) Low torque loads D) Power factor corrections
28. Slip-rings in a synchronous motor carry
 A) Direct current B) Alternating current C) No current D) all of the above
29. The angle between the rotating stator flux and rotor poles is called _____ angle.
 A) Torque B) Obtuse C) Synchronizing D) Power factor
30. An important advantage of a synchronous motor over wound round induction motor is that
 A) Its power factor may be varied at will B) Its speed is independent of supply frequency
 C) Its speed may be controlled more easily D) None of the above
31. Power factor of a synchronous motor is unity when
 A) The armature current is maximum B) The armature current is minimum

- C) The armature current is zero D) None of the above
32. In which of the following motors the stator and rotor fields rotate simultaneously?
 A) D.C. motor B) Reluctance motor
 C) Universal motor D) Synchronous motor E) Induction motor
33. In a synchronous motor, the maximum power developed depends on all of the following except
 A) Rotor excitation B) Maximum value of coupling angle
 C) Direction of rotation D) Supply voltage
34. The construction of a synchronous motor resembles
 A) A series motor B) An induction motor
 C) An alternator D) A rotary converter
35. Which load is the cause for low power factor?
 A) Inductive load B) Capacitive load
 C) Resistive load D) Resistive and capacitive load
36. Which is the disadvantages of low power factor
 A) Efficiency reduces B) Requires more copper
 C) Voltage fluctuation increases D) Overloading of cables and switches
37. Which is the advantage of higher power factor?
 A) Efficiency increases B) Requires less copper
 C) No voltage fluctuation D) Reduction in power cost
38. Which is to be varied to control the power factor through synchronous motor?
 A) Rotor voltage B) Speed C) Input voltage to stator D) Rotor excitation current

ANSWERS: SYNCHRONOUS MOTOR

1. A 2.B 3.D 4.D 5.B 6.B 7.C 8.D 9. B 10.D 11.C 12.D 13.D 14.C 15.D 16.B 17.C 18.D 19.D
 20.B 21.A 22.D 23.C 24.B 25. B 26. B 27. D 28. A 29. A 30. A 31. B 32. D 33. C 34. D 35. A 36.
 D 37. D 38. D

THREE PHASE INDUCTION MOTOR

1. Most commonly used motor types in today's industry is
(a) DC motor (c) Synchronous Motor
(b) Induction motor (d) All of These
2. Stator of an induction motor contains three phase winding placed at
(a) 60 Electrical degree (c) 120 Electrical degree
(b) 90 Electrical degree (d) 180 Electrical degree
3. What will happen to a 3 phase motor stator winding, if three phase supply is fed into it?
(a) It produces magnetic flux (c) It produces heat around the core
(b) It produces rotating magnetic field (d) It makes humming noise
4. The direction of rotation of the stator magnetic field depends upon
(a) Voltage of the Supply (c) Type of stator binding
(b) Positioning of the rotor (d) The phase sequence of the supply
5. Which rule/law is applied to find the direction of magnetic field of the rotor?
(a) Fleming's right hand rule (c) Lenz's Law
(b) Maxwell's cork screw rule (d) Faradays law of electromagnetic induction
6. Which one is the cause to move the rotor in three phase induction motor?
(a) Rotating Magnetic Field only (c) The rotor magnetic field only
(b) The emf induced in the rotor bars (d) The interact in between the stator and rotor magnetic field.
7. Which of the following is not a valid synchronous speed?
(a) 500 RPM (c) 200RPM
(b) 750 RPM (d) 3000 RPM
8. The speed of a 50 Hz Induction motor will be greatest possible when number of poles are
(a) 8 (b) 4 (c) 6 (d) 2

9. The magnetic field produced in the stator of a three phase induction motor travels at
- (a) Rotating Speed (c) Synchronous Speed
(b) Asynchronous Speed (d) Slip Speed
10. Which of the following speed is called actual speed in a 3 phase induction motor?
- (a) Speed of the rotor (c) Speed of the rotating magnetic field
(b) Speed of the stator (d) Speed of the flux produced in the rotor
11. 5 HP, 3-Phase, 440V, 50 HZ induction motor has 4% slip .
The frequency of rotor emf will be.....
- (a) 200 Hz (c) 2 Hz
(b) 50 Hz (d) 0.2 Hz
11. An induction motor runs at slip speed of 2 rpm, when its synchronous speed is 1000 rpm. If the supply frequency is 50Hz, then the slip frequency of the blocked rotor will be
- (a) 0.1 Hz (c) 100 Hz
(b) 50 Hz (d) 1000 Hz
12. The synchronous speed of an induction motor refers to the speed of the.....
- (a) Rotor (c) Rotating magnetic field
(b) Armature (d) Value marked on the name plate
13. The frequency of the induced emf in an induction motor is
- (a) Greater than the supply frequency (c) Same as the supply frequency
(b) Lesser than the supply frequency (d) None
14. Induction motor runs at.....
- (a) Synchronous speed (c) Above Synchronous speed
(b) Below Synchronous speed (d) None of these
15. The synchronous speed (N_s) of induction motor inversely proportional to.....
- (a) Starter Frequency (c) The current flows in stator winding
(b) Number of poles (d) The applied voltage
16. Calculate the number of poles of 3 phase induction motor running at 750 rpm, with 50 Hz frequency.

- (a) 2 (c) 6
(b) 4 (d) 8

17. Calculate the synchronous speed (N_s) of 5HP, 6 pole/ 415v/ 30Hz 3 phase squirrel cage induction motor.

- (a) 960 rpm (c) 1400 rpm
(b) 1000 rpm (d) 1500 rpm

18. A 12 pole 3 phase alternator driven at a speed of 800 rpm supplies power to a 6 pole, 3 phase induction motor. If the slip of the motor at full load is 4%

Calculate the full load speed of the motor.

- (a) 727.5 rpm (c) 1200 rpm
(b) 750 rpm (d) 1152 rpm

19. The speed of a 3 phase induction motor is 1400 rpm on full load when running on 415v, 50 Hz supply

How many poles does the motor has got?

- (a) 2 (c) 6
(b) 4 (d) 8

20. Find the number of poles when the frequency is 50 Hz and speed of the motor is 500 rpm.

- (a) 5 (c) 12
(b) 10 (d) 24

21. When a 3 phase motor is stationary, the frequency of the rotor current is

- (a) Less than supply frequency (c) Same as supply frequency
(b) More than supply frequency (d) Zero frequency

22. When a speed of an induction motor is increased, what will happen to the rotor frequency?

- (a) Decreased (c) Remains constant
(b) Creases (d) Zero

23. To increase the starting torque of a three phase induction motor, methods used to increase its.....

- (a) Supply voltage (c) Stator resistance
(b) Supply frequency (d) Rotor resistance

24. The torque of an induction motor is
- (a) Directly proportional to slip (c) proportional to the square of the slip
(b) Inversely proportional to slip (d) None of these
25. When maximum torque is obtained the rotor power is
- (a) Unity (c) 0.707 lag
(b) Zero (d) 0.5 lag
26. Calculate the torque in Newton metre produced by 10 HP (metric) squirrel cage induction motor rotating at 2880 rpm.
- (a) 24.4 Nm (c) 25.42 Nm
(b) 24.75 Nm (d) 26.35 Nm
27. The frame of induction motor and generator is made of
- (a) Silicon steel (c) Aluminium
(b) Cast iron (d) Mild steel
28. In squirrel cage induction motor the rotor slots are slightly skewed in order to
- (a) Reduce wind age losses (c) Reduce accumulation of dirt and dust
(b) Reduce eddy currents (d) Reduce magnetic hum
29. The advantage of skewing in induction motor is/are.....
- (a) Motor runs smoothly as the magnetic hum is reduced.
(b) The tendency of the rotor teeth to remain under the stator teeth due to direct magnetic attractions reduced
(c) More uniform torque is obtained while running
(d) All of these
30. The shaft of an induction motor is made from.....
- (a) High speed steel (c) Carbon Steel
(b) Stainless steel (d) Cast iron
31. In some 3-phase induction motor copper bars are placed deep in the rotor, it is done so that.....
- (a) Slip under normal running condition is reduced (c) starting torque is increased
(b) Power factor is improved (d) Output is Increased
32. The numbers of winding in double cage induction motors.....
- (a) One (c) Three

(b) Two (d) Four

33. Which is the application of double squirrel cage induction motor?

- (a) Irrigation pump set (c) Textile Mill motor
(b) Lathe machine motor (d) Motor generator set

34. The three phase squirrel cage motors can be classified according to their electric characteristics.

Which of the following classification motor is used for 3 phase compressor motor?

- (a) Class B (c) Class D
(b) Class A (d) Class C

35. Which of the following parts is not related to an induction motor?

- (a) Rotor (c) Stator Winding
(b) Slip ring (d) Bearing

36. The stator ending of a three phase slip ring induction motor has 4 poles

How many numbers of poles are there in rotor winding

- (a) 2 (c) 6
(b) 4 (d) 8

37. Slip ring motor has

- (a) Low starting torque (c) High starting torque
(b) Medium starting torque (d) None of these

38. Slip ring motor is preferred over squirrel cage induction motor where

- (a) High starting torque is required (c) Heavy pullout torque is required
(b) Low torque is heavy (d) All of these

39. A 3 phase slip ring induction motor has

- (a) Short circuited rotor (c) Wound rotor
(b) Double cage rotor (d) All of these

40. Slip ring induction motors are employed only for.....

- (a) Speed control (c) Both (A) and (B)
(b) High starting torque (d) None of these

41. Slip rings are usually made of

- (a) Copper (c) Phosphor Bronze

(b) Carbon

(d) Aluminium

42. What will happen to the speed of the slip ring induction motor, if its slip is increased at a given torque?

(a) Speed is decreased

(c) Speed remains constant

(b) Speed is increased

(d) Speed is increased to infinity

43. Starting of induction motors 'n' times full load current, where n ranges from

(a) 2-3

(c) 5-7

(b) 3-5

(d) 7-9

44. For motor circuit fuses are rated as

(a) Twice the full load current of the motor (c) Starting current of the motor

(b) Thrice the full load current of the motor (d) No load current of the motor

45. A contactor has main and auxiliary contacts

What is the current level of auxiliary contact?

(a) Less than the main contact current (c) Greater than the main contact current

(b) Equal than the main contact current (d) Equal to the load current

46. Contactors are generally.....

(a) Electrically controlled switch

(c) Man controlled Switch

(b) Mechanically controlled switch

(d) Centre tap switch

47. What is full form of DOL?

(a) Direct on load

(c) Direct only line

(b) Direct on line

(d) Direct over load

48. For a small capacity induction motor the type of starter used is.....

(a) Star- Delta Starter (c) Auto- Transformer starter

(b) DOL-Starter (d) Rotor- Resistance Starter

49. DOL starters are used to start the AC motor only up to.....

(a) 2 HP

(c) 4 HP

(b) 3 HP

(d) 1 HP

50. IE rule prohibits DOL starting of 3-phase is above

(a) 0.5 HP

(c) 3 HP

(b) 1 HP

(d) 5 HP

51. A three phase 1.2 KW, 440V, 50 cycles motor, starter use is.....

- (a) DOL starter (c) Auto transformer starter
(b) Star/ Delta starter (d) Oil immersed starter

52. Supply to no-volt coil in a DOL starter is maintained after releasing the start button (switch) through.....

- (a) Stop button (c) Over load relay
(b) Auxiliary contact (d) Start button

53. In a three phase induction motor started by a DOL starter the short circuit current is protected by.....

- (a) Over load relay (c) Back-up Fuses
(b) No-volt coil (d) Protective earth conductor

54. Inching operation is also called as.....

- (a) Starting (c) Breaking
(b) Stopping (d) Jogging

55. Which of the following current level of motor is to set in the over load relay?

- (a) Full load current (c) Actual load current
(b) More than the full load current (d) Less than the actual load current

56. The nominal trip range of the bimetallic relay is..... percentage of the nominal trip rating of the heating unit.

- (a) 65 to 75 (c) 55 to 80
(b) 85 to 115 (d) 120 to 135

57. Which part of the magnetic over load relay is the cause to lift the plunger in an upward direction

- (a) Magnetic coil (c) Relay contact lever
(b) Plunger (d) Insulated bracket

58. Which one of the following is not a reason for humming and chattering in a DOL starter?

- (a) Improper voltage for NVC (c) Dust or Rust on pole faces
(b) Open shading band (d) Welded auxiliary contact

59. How many connection terminals are in a Star/delta starter?

- (a) 3 (c) 6
(b) 4 (d) 9

60. In the star-delta starter method the voltage applied across the stator winding is
- (a) Equal to the supply voltage (c) $1/\sqrt{3}$ times the supply voltage
 (b) 1.732 times the supply voltage (d) None of these
61. The star delta starter used in
- (a) Flour mills (c) Machine tool drive
 (b) Pumps (d) All of these
62. In a manual star delta starter, which part is used for holding the plunger and the handle in delta position?
- (a) Spring (c) Handle
 (b) No volt coil (d) Lever plate
63. In the manual star delta starter, the stop button connection is in series with the....
- (a) No-volt coil (c) No-volt coil and load relay contact
 (b) Over load relay contacts (d) No-volt coil and start button
64. Which type of 3 phase motor starter is suitable for the 3 phase slip ring induction motor?
- (a) DOL starter (c) Star-Delta starter
 (b) Rotor- Resistance starter (d) Auto-Transformer Starter
65. A wound rotor is conveniently started by.....
- (a) DOL starting method (c) Auto-Transformer starting method
 (b) Star-Delta starting method (d) Increasing rotor resistance
66. Rotor resistance starting can be applied to which of the following motors.....
- (a) Double cage (c) Medium duty squirrel cage
 (b) Heavy duty squirrel cage (d) Slip ring
67. A high starting torque is obtained in a slip ring induction motor by using.....
- (a) A starter rheostat starter (c) A rotor resistance starter
 (b) An auto-transformer starter (d) A star-delta starter
68. Rotor resistance starters are used with wound rotor induction motor
- When the motor is running the resistances in starter are.....**
- (a) Shorted (c) Connected in delta
 (b) Open circuited (d) Connected in star

69. What is the effect of single phasing on a three phase motors if it occurs at the time of starting a motor?
- (a) Falls start or stalls
 - (b) Runs at slow speed
 - (c) Runs normally but fails to take load
 - (d) Takes time to come to full speed
70. What is the possible cause, if the starter with single phasing preventer trips frequently during running of 3 phase induction motor?
- (a) Improper function of relay contact
 - (b) Improper phase sequence
 - (c) Abnormal fluctuation in line voltage
 - (d) Open in Holding Circuit
71. Which one is NOT a type of single phasing preventer?
- (a) BYR
 - (b) RBY
 - (c) BRY
 - (d) None of these
72. What will happen to a 3 phase induction motor if two phases of the supply are interchanged
- (a) The motor rotates in reverse direction
 - (b) The motor will not run
 - (c) The motor will run in the same direction
 - (d) The motor winding will burn
73. The direction of rotation of the induction motor can be reversed by.....
- (a) Changing any two leads connection of stator input
 - (b) Changing all the three leads connection of the stator
 - (c) Changing the output connection of the stator
 - (d) Changing the connection in terminals star to delta & delta to star
74. In a three phase induction motor
- (a) Power factor at starting is high as compared to that while running
 - (b) Power factor at starting is low as compared to that while running
 - (c) Power factor at starting is the same as that while running
 - (d) None of these above
75. For induction motors.....
- (a) Should be essentially a constant speed motor
 - (b) Its speed reduces to some extent with increase in load
 - (c) Does not need to be synchronized

(d) All of these

76. What is power factor of an induction motor at no load?

- (a) Equal to load power factor
- (b) More than load power factor
- (c) Less than load power factor
- (d) Unity power factor

77. When load increases the power factor of an induction motor becomes.....

- (a) More and more lagging
- (b) Constant
- (c) Unity
- (d) Leading

78. The shape of the torque/slip curve of induction motor is.....

- (a) Parabola
- (b) Hyperbola
- (c) Rectangular parabola
- (d) Straight line

79. In a constant power type load.....

- (a) Torque is proportional to speed
- (b) Torque is proportional to square of speed
- (c) Torque is inversely proportional to speed
- (d) Torque is independent of speed

80. Which is the cause for a 3 phase induction motor failing to start?

- (a) Incorrect size of fuse
- (b) High frequency
- (c) Stiff Bearing
- (d) Dirt in ventilation ducts

81. A motor starter fails to trip due to fault

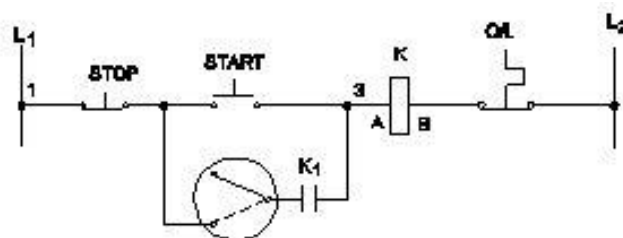
What is the reason to it?

- (a) Broken shading ring
- (b) Short circuit in the motor
- (c) Rust in pole faces
- (d) Wrong setting of over load relay

82. What type of bolt is used while erecting slide rails for fixing motors?

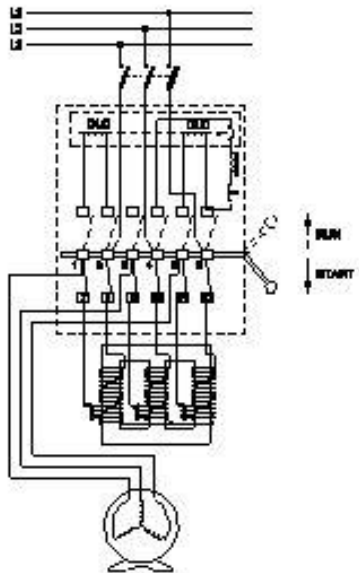
- (a) Anchor Bolt
- (b) Bed bolt
- (c) Wing nut
- (d) Coach screw

83. What is the type of control circuit given below ?



- A- Inching control
- B- ON remote control
- C- OFF remote control
- D- Forward & reverse control

84. What is the name of the A.C motor starter given below?



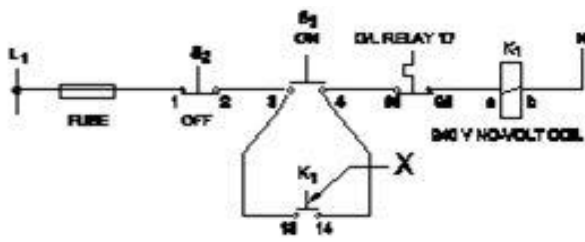
A- DOL starter

B- Auto transformer starter

C- Semi automatic star delta starter

D- Fully automatic star delta starter

85. What is the name of the contact marked as X given below?



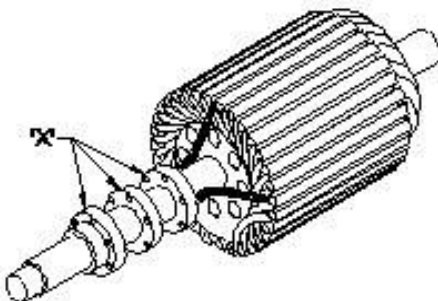
A -Star contact

B- Delta contact

C- Auxiliary contact

D- Over load relay contact

86. What is the name of the part marked as X given below?



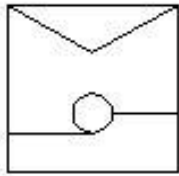
A- Shaft

B- Brushes

C- Bearings

D -Slip rings

87. What is the name of the starter symbol given below?



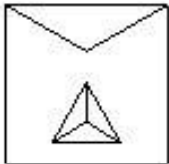
A- D.O.L starter

B- Auto transformer starter

C- Automatic star/delta starter

D- Semi automatic star/delta starter

88. What is the name of the starter symbol given below



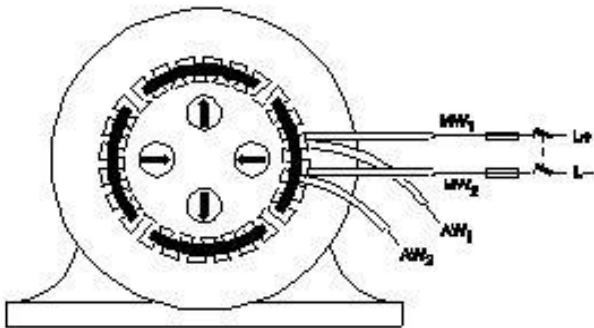
A- Star delta starter

B- Rheostatic starter

C- Direct on-line starter

D- Autotransformer starter

89. Which test in winding is illustrated given below?



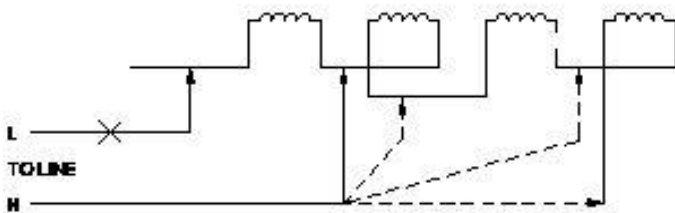
A- Polarity test

B- Ground test

C- Continuity test

D- Short circuit test

90. Which type of testing of winding is illustrated given below?



A- Polarity test

B- Resistance test

C- Short circuit test

D- Voltage drop test

ANSWER-3PHASE INDUCTION MOTOR

1.B 2.C 3.B 4.D 5.B 6.D 7.C 8.D 9.C 10.A 11.C 11.B 12.C 13.C 14.B 15.B 16.D 17.B 18.D
 19.B 20.C 21.C 22.A 23.D 24.D 25.C 26.A 27.B 28.D 29.D 30.C 31.C 32.B 33.C 34.D
 35.B 36.B 37.C 38.C 39.C 40.C 41.C 42.A 43.B 44.C 45.A 46.A 47.B 48.B 49.C 50.D
 51.A 52.B 53.A 54.D 55.C 56.B 57.D 58.D 59.D 60.C 61.D 62.B 63.A 64.B 65.D 66.D
 67.C 68.A 69.A 70.C 71.D 72.A 73.A 74.B 75.B 76.C 77.A 78.C 79.C 80.C 81.D 82.A
 83.A 84.B 85.C 86.D 87.B 88.A 89.A 90.B

SINGLE PHASE INDUCTION MOTOR

1. Single Phase motors are commercially manufactured upto.....
 - a. 1 HP
 - b. 2 HP
 - c. 5 HP
 - d. 10 HP
2. Most of the single phase induction motors are machine
 - a. 2 pole
 - b. 6 pole
 - c. 8 pole
 - d. 4 pole
3. A single –phase induction motor.....
 - a. Is self-starting
 - b. Operates at a fixed speed
 - c. is less reliable than a three phase synchronous
 - d. None of the above
4. In single phase motors, the main winding and starting winding are placed apart from the degree of.....
 - a. 180°
 - b. 120°
 - c. 90°
 - d. 60°
5. Split –phase induction motors can be classified into....
 - a. 6
 - b. 5
 - c. 4
 - d. 3
6. Commutator motors can be classified into.....
 - a. 5
 - b. 4
 - c. 3
 - d. 2
7. Which part of the resistance start induction run single phase motor is having higher inductance?
 - a. Main winding
 - b. Auxiliary winding
 - c. squirrel cage rotor core
 - d. Squirrel cage rotor bars
8. In split phase motor the ratio of number of turns for starting winding to that of running winding is.....
 - a. 2.0
 - b. >1
 - c. 1.0
 - d. <1
9. Which type of single phase motor is used in washing machine?
 - a. Induction start-Induction run motor
 - b. Resistance start -Induction run motor
 - c. Permanent capacitor motor
 - d. Shaded pole motor
10. In a permanent capacitor motor the capacitor is series with

- a. Starting winding
 - b. Supply
 - c. Running winding
 - d. Starting and running winding
11. Which type of motor is used in ceiling fan?
- a. Shaded pole motor
 - b. Universal motor
 - c. Permanent Capacitor start motor
 - d. Capacitor start induction run motor
12. Current drawn from the supply by a permanent capacitor motor will be
- a. Lagging the voltage by less than 90°
 - b. Lagging the voltage by 90°
 - c. Leading the voltage by 90°
 - d. In-phase with the voltage
13. If the capacitor in a fan is shorted then the fan will
- a. Not run
 - b. Run slowly
 - c. Run fast
 - d. Run with noise
14. What happens to the speed of permanent capacitor motor, when the supply voltage is decreased ?
- a. Speed decreases
 - b. Speed increases
 - c. No change in the speed
 - d. Motor will not start
15. The single phase capacitor is running very slow speed even the supply voltage and the capacitor are in normal condition
- a. Defective bearing
 - b. Low lubrication in bearing
 - c. Loose terminal connection
 - d. Open in starting winding
16. If a single phase motor fails to start the probable cause may be
- a. Open in auxiliary winding
 - b. Open in main winding
 - c. Blown losses
 - d. Any of these
17. The direction of capacitor start single phase induction motor can be reversed by interchanging the connection of
- a. Supply terminals
 - b. Main winding only
 - c. Connector of capacitor
 - d. Both main & auxiliary winding together
18. A batch of ceiling fans was refitted after overhauling out of this two fans are found to be wobbling
- a. The rotor of the fan is changed
 - b. The bearing of the fan is changed
 - c. The rotor position is changed
 - d. The blades of the fan are changed
19. If the ceiling fan when switched on runs at slow speed in the reverse direction it can be concluded that
- a. Winding has burnt out
 - b. Bearings are worn out
 - c. Capacitor is ineffective
 - d. None of these
20. The type of capacitor used in capacitor start motor is ...
- a. Electrolytic
 - b. Ceramic
 - c. Paper
 - d. Mica
21. The starting capacitor of a single phase motor is

- a. Electrolytic capacitor
 - b. Ceramic capacitor
 - c. Paper capacitor
 - d. None of these
22. Single phase capacitor start induction run motor is used in wet grinders. How will you connect the capacitor in wet grinder motor?
- a. Series with starting winding
 - b. Series with running winding
 - c. parallel with starting winding
 - d. Parallel with running winding
23. What is the phase angle difference between the current in the main winding and the supply voltage at the time of starting of capacitor start induction run motor?
- a. 20° lagging
 - b. 70° lagging
 - c. 20° lagging
 - d. 90° lagging
24. The starting torque of a capacitor start motor is.....
- a. Zero
 - b. Low
 - c. same as rated torque
 - d. More than
25. A capacitor start single phase induction motor will usually have a power factor of
- a. Unity
 - b. 0.8 leading
 - c. 0.6 leading
 - d. 0.6 leading
26. What will happen to a DC electrolytic capacitor if it is used for an AC Capacitor type of motor?
- a. Non-reversal
 - b. Slow speed
 - c. Capacitor will heat up producing enormous gas and blowing into pieces
 - d. High speed
27. A capacitor start capacitor run single phase induction motor is basically a
- a. AC Series motor
 - b. DC Series motor
 - c. 2 phase induction motor
 - d. 3 phase induction motor
28. In a capacitor start capacitor run single phase motor the ratio of starting torque T_{st} to full load torque T_{fl} is.....
- a. 1
 - b. 2
 - c. 3
 - d. 4
29. The motor used in compressor of household refrigerators is
- a. DC Series motor
 - b. Shaded pole motor
 - c. universal motor
 - d. Two induction motor
30. A single phase motor generally used for small air compressor is
- a. Capacitor start capacitor run
 - b. Split phase
 - c. reluctance type
 - d. Shaded pole
31. Which one of the following single phase motor performs with better power factor?
- a. Universal motor
 - b. Repulsion motor
 - c. capacitor start motor
 - d. Capacitor run motor
32. Which is the application of capacitor start capacitor run motor?
- a. Fan
 - b. Hardier
 - c. refrigerator
 - d. Food mixer

33. The rotor of a shaded pole motor is
 - a. Wound rotor
 - b. Squirrel cage rotor
 - c. stent pole
 - d. Shaded pole
34. In shaded pole single phase motor the revolving field is produced by
 - a. Capacitor
 - b. Regular
 - c. shading ring
 - d. Winding
35. In a shaded pole motor the phase displacement occur by
 - a. Cent fugal switch
 - b. Shading ring
 - c. capacitor
 - d. Man pole winding
36. Main advantage of shaded pole motor are
 - a. No centrifugal switch
 - b. Concentrated winding
 - c. good power factor
 - d. Large starting torque
37. A single phase motor with shading coil the efficiency varies form
 - a. 5% to 20%
 - b. 5% to 25%
 - c. 5% to 30%
 - d. 5% to 35
38. The position of shaded ring with respect to main pole of the shaded pole motor determines
 - a. Speed of motor
 - b. Direction of rotation
 - c. efficiency
 - d. Torque
39. The electric motor used in toys which run on AC are usually
 - a. Capacitor start motor
 - b. Split phase motor
 - c. Capacitor start capacitor run motor
 - d. Shaded pole motor
40. Which type of motor is used to drive the drum switch in decorative lamp circuit
 - a. Capacitor start induction run motor
 - b. Spelt phase motor
 - c. universal motor
 - d. Shaded pole motor
41. Which type of single phase motor can be used on both AC and DC supply
 - a. Sanded pole motor
 - b. Universal motor
 - c. Repulsion motor
 - d. Capacitor start induction run motor
42. The universal motor works on the same principle of which type of machine
 - a. DC generator
 - b. DC Motor
 - c. AC induction motor
 - d. AC Generator
43. Which type of single phase motor is having wound rotor
 - a. Spit phase motor
 - b. Universal motor
 - c. Capacitor motor
 - d. Shaded pole motor
44. Universal motor develops full load torque at starting is
 - a. 350 times
 - b. 400 times
 - c. 450 times
 - d. 500 times
45. One of the operating characteristic of universal motor is
 - a. Constant speed at all loads
 - b. High speed at full load
 - c. Constant speed at full load
 - d. Wearying speed depending

46. If a particular application needs high speed and high starting torque then which of the following motors will be preferred
- a. Universal motor
 - b. Shaded pole type motor
 - c. Capacitor start motor
 - d. Capacitor start and run motor
47. The speed of universal motor is inversely proportional to
- a. The load
 - b. Voltage
 - c. Current
 - d. Resistance
48. The series field diverter speed control method is mainly used in
- a. Fan motors
 - b. Electric train
 - c. Food mixer
 - d. Printing machine
49. What will happen to the universal motor when it is started without load
- a. It will not run
 - b. Runs with very slow speed
 - c. Runs with very high speed
 - d. Runs with normal speed
50. In an universal motor the armature reaction can be reduced by
- a. Salient pole
 - b. Compensating winding
 - c. Shifting the brush position
 - d. Equalizer rings
51. The direction of universal motor can be reversed by
- a. Reversing the supply terminals
 - b. Switching from single phase to DC
 - c. Interchanging brush leads
 - d. None of these
52. What will be the fault if the contact of carbon brushes with commutator is improper in the universal motor
- a. Produces humming sound
 - b. Motor is over heated
 - c. It gives shock to the operator
 - d. Motor fails to start
53. The type of motor used in food mixer is
- a. Shaded pole motor
 - b. Universal motor
 - c. Capacitor start motor
 - d. Capacitor run motor
54. The application of the universal motor is
- a. Refrigerators
 - b. Vacuum cleaner
 - c. Compressor
 - d. Culling fan
55. Which motor would you select for vacuum cleaners?
- a. Universal motor
 - b. Repulsion motor
 - c. Hysteresis motor
 - d. reluctance
56. On inspection it was found the commutator of a universal motor was badly cut and using of sand paper to rectify is no use. Which of the following is the best thing to do?
- a. True the surface of the commutator on a lathe
 - b. Clean the commutator with CTC
 - c. Replace the commutator
 - d. Replace the armature
57. Single phase motor whose direction of rotation cannot be changed by changing the connection is a

- a. Capacitor start and run motor
 - b. Double capacitor motor
 - c. Repulsion induction motor
 - d. Universal motor
58. Which method the direction of relation of the repulsion motor can be reserved
- a. By changing the supply terminals
 - b. By changing the brush contact terminals
 - c. By shifting the angle position of the brushes
 - d. By changing the field pole terminals
59. Which of the following motors does not have wound rotor?
- a. Split phase motor
 - b. Repulsion motor
 - c. Universal motor
 - d. DC shunt motor
60. The short coming of repulsion motor is
- a. Variation of speed with load
 - b. Low power factor
 - c. Tendency to spark at brushes
 - d. All of these
61. Which of the following motor does not have a winding or commutator or brush in its rotor?
- a. DC Shunt motor
 - b. Stepper motor
 - c. Slip ring induction motor
 - d. Universal motor
62. The stator winding of any type of an induction motor burns immediately when its rotor is not rotating due to absence of back emf during an AC supply
Which motor stator winding will not burn even the rotor of the motor does not rotate and kept ideal for a long time or required time
- a. Shaded pole motor
 - b. Slip ring motor
 - c. Capacitor motor
 - d. Stepper motor
63. Which type of motor is used in electric clock and timing devices
- a. DC Shaft motor
 - b. Externally excited single phase synchronous motor
 - c. Non excited single phase synchronous motor
 - d. Separately excited single phase synchronous motor
64. A stepper motor is
- a. ADC motor
 - b. A single phase AC motor
 - c. A multi phase motor
 - d. A two phase motor
65. A reluctance motor
- a. Is self starting
 - b. Is constant speed motor
 - c. Need no DC excitation
 - d. All of these
66. Reluctance motors are
- a. Double excited
 - b. Single excited
 - c. Either A or B
 - d. None of these
67. A hysteresis motor works on the principle of
- a. Hysteresis loss
 - b. Magnetisation of rotor
 - c. Eddy current loss
 - d. Electromagnetic induction

68. The rating of fuse for the protection of single phase motors should be equal to there times

- a. running current
- b. Starting current
- c. No load current
- d. Full load current

69. Pumps can be classified mainly into

- a. 2
- b. 3
- c. 4
- d. 5

70. Which type of pump deliver pulsating flow of water and not a continuous flow

- a. Submersible pump
- b. Jet pump
- c. Reciprocating pump
- d. Centrifugal pump

71. What is the reason for a pump not delivering water

- a. Delivery head is too high
- b. Damage belt bearing
- c. Leakage in suction pipe
- d. Pump casing and sector pipe is not primed

72. What is the reason that the pump vibrates excessively

- c. Foundation not aged
- d. Ground packing not in proper position
- e. Worn of shaft sleeve
- f. Suction lit is too high

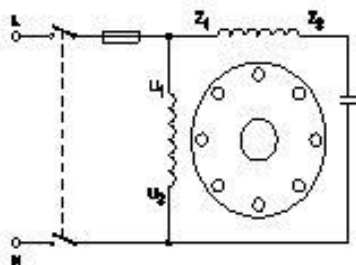
73. What is the recommended value of insulation resistance between celling fan and winding

- a. Shall not be less than 0.5 M1
- b. Shall not be less than 2 m2
- c. Shall not be less than 1 mq
- d. Shall not be less than 3 mq

74. What is the recommended lubrication schedule for a sealed bearing in a motor

- a. Often
- b. Monthly
- c. Na need for lubrication
- d. Quarterly

75. What is the name of single phase motor given below ?



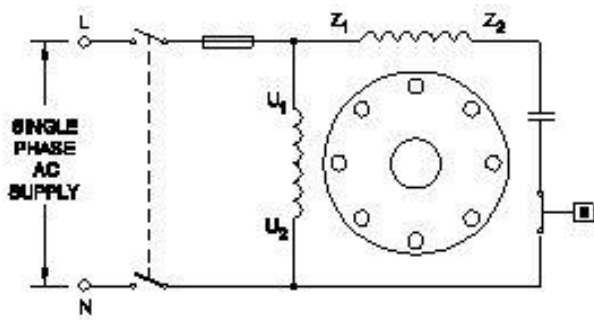
A -Permanent capacitor motor

B- Induction start capacitor run motor

C- Capacitor start capacitor run motor

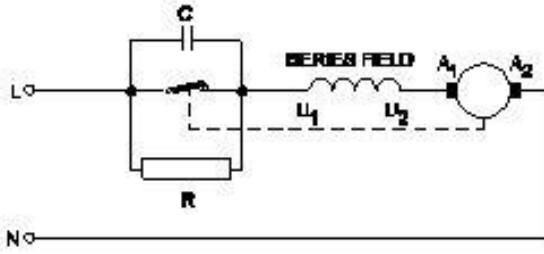
D- Capacitor start induction run motor

76. What is the type of A.C single phase motor given below?



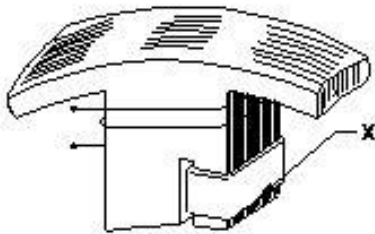
- A- Permanent capacitor motor B- Capacitor start capacitor run motor
C- Induction start induction run motor D- Capacitor start induction run motor

77. What is the purpose of the capacitor (C) in centrifugal switch speed control method of universal motor given below?



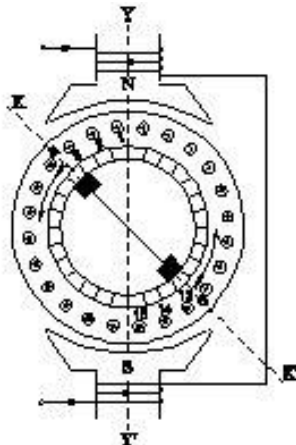
- A- Maintain constant speed B- Improve the power factor
C- Protect from the over loading D- Reduce the sparks on the contacts

78. What is the function of the part marked as x in shaded pole motor given below?



- A- Increase the efficiency B- Maintain constant speed
C- Initiate the rotor movement D- Strengthen the magnetic field

79. What is the effect in a repulsion motor, if the magnetic axis shifted to another side given below?



- A- Direction of rotation will change B- Direction of rotation remains same

C- Motor speed increases from rated speed D- Motor speed will reduce from rated speed

ANSWER-SINGLE PHASE INDUCTION MOTOR

1.B 2.B 3.D 4.C 5.A 6.B 7.A 8.D 9.B 10.A 11.C 12.A 13.A 14.A 15.D 16.D
17.B 18.D 19.C 20.C 21.A 22.A 23.C 24.C 25.C 26.C 27.C 28.C 29.D 30.A
31.D 32.C 33.B 34.C 35.B 36.A 37.D 38.B 39.D 40.D 41.B 42.B 43.B 44.C
45.D 46.A 47.A 48.C 49.C 50.B 51.C 52.D 53.B 54.B 55.A 56.A 57.C 58.C
59.A 60.D 61.B 62.D 63.C 64.D 65.B 66.C 67.A 68.D 69.A 70.C 71.D 72.B
73.B 74.C 75.A 76.D 77.D 78.C 79.A .

TRANSFORMER

1. What is the working principle of the two winding transformer?
(a) Self-induction (b) Mutual induction
(c) Principle of DC motor (d) Lenz's law
2. Transformer action requires _____
(a) Constant magnetic flux (b) Increasing magnetic flux
(c) Alternating electric flux (d) Alternating magnetic flux
3. Transformer is used for _____
(a) To step down voltage (b) To step up and down the primary Voltage
(c) To step up voltage (d) none of these
4. In a transformer the energy is transferred from primary to secondary _____
(a) Through cooling coil (b) Through air
(c) By the flux (d) none of these
5. The power transformer is a constant _____
(a) Voltage device (b) Current device
(c) Power device (d) Main flux device
6. The path of a magnetic flux in a transformer should have _____
(a) High resistance (b) High reluctance
(c) Low resistance (d) Low reluctance
7. The material normally used for transformer bobbin is _____
(a) Fabric based hylam (b) Wood
(c) Aluminium sheet (d) Plastic
8. In which material core of the transformer is constructed?
(a) Silicon iron steel (b) Mild steel iron
(c) Carbon steel iron (d) Pig iron steel
9. In transformer laminating materials have an alloy of _____
(a) 4% silicon and 96% iron (b) 3% silicon and 97% iron
(c) 5% silicon and 95% iron (d) 6% silicon and 94% iron
10. The purpose of providing an iron core in a transformer is to _____
(a) Provide support to windings (b) Reduce hysteresis loss
(c) Decrease the reluctance of the magnetic path
(d) Reduce eddy current losses
11. The transformer cores are insulated from each other by _____
(a) Mica strip (b) Thin coat of varnish

- (c) Paper(d) Any of these
12. Transformer lamination thickness for 50Hz is _____
 (a) 0.25 mm (b) 0.24 mm
 (c) 0.23 mm (d) 0.22 mm
13. The CRGO silicon steel laminations are used for core of a transformer. CRGO stands for _____
 (a) Cold rolled grain obtained (b) Cooled rolled green obtained
 (c) Cold rolled grain oriented (d) clear red green oriented
14. Use of superior quantity laminated CRGO silicon iron sheet reduces _____
 (a) Hysteresis loss (b) Copper losses due to load currents
 (c) Copper friction & windage losses (d) other thermal & mechanical losses
15. Small type transformer core for shell type generally used _____
 (a) E & I type of core (b) F & F type of core
 (c) E & E type of core (d) T & U type of core
16. Which type of winding is used in 3 phase shell type transformer?
 (a) Circular type (b) Sandwich type
 (c) Cylindrical type (d) Rectangular type
17. The primary and secondary winding of a transformer are _____ coupled.
 (a) Electrically (b) Magnetically
 (c) Mechanically (d) electrically & magnetically
18. In transformer electrical energy is transferred from one circuit to another without change in _____
 (a) Voltage (b) Current
 (c) Frequency (d) Turns
19. Primary winding of transformer _____
 (a) Is always a low voltage winding (b) Is always a high voltage winding
 (c) Could either be a low or high voltage winding (d) none of these
20. Which winding in a transformer has more number of turns?
 (a) Low voltage winding (b) High voltage winding
 (c) Windings does not depend on number of turns (d) all of these
21. What will happen to 415V / 240V, 1KVA transformer when it is connected to a DC supply?
 (a) The output will be 240V (b) The output will be 415V
 (c) The transformer may burn (d) Remain as it is
22. The input side of the single phase transformer is called as _____
 (a) Secondary side (b) Primary side
 (c) High voltage side (d) Low voltage side
23. In a power transformer the current flowing in the coil connected to the AC source is _____
 (a) LT winding (b) Primary winding
 (c) HT winding (d) Secondary winding
24. In the two winding transformer, the load (output) side is known as _____
 (a) Primary side (b) Secondary side
 (c) Low voltage side (d) High voltage side
25. The transformer used to transmit the power to longer distance is called as _____
 (a) Current transformer (b) Step up transformer
 (c) Voltage transformer (d) Step down transformer
26. In a transformer, if the secondary winding has less turns than the primary winding, the secondary voltage will be _____
 (a) Lower than the primary voltage (b) Higher than the primary voltage
 (c) The same as the primary voltage (d) Twice the primary voltage

27. Low and high voltage winding of the transformer are placed on the core in the following way _____
 (a) Low voltage winding inside, high voltage Winding outside (b) High voltage winding inside, low voltage winding outside
 (c) Both (A) & (B) (d) Any of (A) or (B)
28. Layer of low voltage winding in a transformer is placed nearer the core so that _____
 (a) Flux linkage are more (b) Number of coils required is less
 (c) Core size is reduced (d) lesser insulation required
29. The function of the magnetizing current (I_m) is to _____
 (a) Magnetize the core (b) Energize the primary winding
 (c) Energize the secondary winding (d) to compensate the loss
30. The magnetizing current (I_m) is very small in magnitude and lags the applied voltage (V_p) by _____
 (a) 120° (b) 90°
 (c) 60° (d) 230°
31. No – Load current of a transformer has _____
 (a) Has high magnitude and low power Factor (b) Has high magnitude and high power factor
 (c) Has small magnitude and high power factor (d) Has small magnitude and low power factor
32. The primary impedance of a transformer is given by _____
 (a) $Z_1 = \sqrt{R_1^2 + X_1^2}$ (b) $Z_1 = \sqrt{R_1^2 - X_1^2}$
 (c) $Z_1 = \sqrt{R_1^2 \times X_1^2}$ (d) $Z_1 = R_1^2 + X_1^2$
33. The secondary impedance of a transformer is given by _____
 (a) $Z_2 = \sqrt{R_2^2 + X_2^2}$ (b) $Z_2 = R_2^2 + X_2^2$
 (c) $Z_2 = \sqrt{R_2^2 - X_2^2}$ (d) $Z_2 = R_2^2 - X_2^2$
34. Primary current in a transformer is determined by _____
 (a) Load on the system (b) Load on the primary
 (c) Load on the secondary (d) none of these
35. Which type of transformer winding has no ohmic resistance and leakage resulting in no losses?
 (a) Distribution transformer (b) Power transformer
 (c) Ideal transformer (d) Instrument transformer
36. The size of a transformer core will depend on _____
 (a) Frequency (b) Area of the core
 (c) Flux density of the core material (d) both (A) & (B)
37. The value of the flux involved in the emf equation of a transformer is _____
 (a) Average value (b) R.M.S value
 (c) Maximum value (d) Instantaneous value
38. In larger transformers a stepped core arrangement is used to minimize the use of copper and _____
 (a) Iron loss (b) Eddy current loss
 (c) Hysteresis loss (d) Copper loss
39. Which part is taken into account while calculating cross sectional area of shell type core of a transformer?
 (a) Any of the outer limb (b) Window
 (c) Centre limb (d) Yoke
40. The transformers are rated in _____
 (a) KW (b) KVA
 (c) KWH (d) KVAR
41. Transformers are rated in terms of KVA instead of KW because _____
 (a) Load factor is often not known (b) KVA is fixed whereas KW depends On the load power factor
 (c) The total transformer loss depends (d) It has become customary

Upon the volt ampere

42. Voltage induced per turn in a transformer is _____
(a) 4 fN volts (b) 4 fN volts
(c) 4 fN volts (d) 4 fN volts
43. The emf equation of a single phase transformer in secondary side is _____
(a) 4.44 fN volt (b) 2.22 fN_m volt
(c) 2.22 fN_m volt (d) 4.44 fN_m volt
44. The RMS value of emf induced in the primary winding (E_p) of a transformer is _____
(a) 4.40 fN volt (b) 4.44 fN volt
(c) 4.44 fN volt (d) 4.44 fN volt
45. Auto transformer makes effective saving on copper and copper losses, when its transformation ratio is _____
(a) Approximately equal to one (b) Less than one
(c) Greater than one (d) none of these
46. The transformation ratio of the transformer depends upon the _____
(a) Exciting current (b) Secondary current
(c) Power factor of secondary circuit (d) all of these
47. What is the formula to determine the transformation ratio "K"?
(a) $K = N_2/N_1 = E_2/E_1 = I_2/I_1$ (b) $K = N_2/E_1 = N_2/E_2 = I_2/I_1$
(c) $K = N_2/I_1 = E_2/N_1 = I_2/E_1$ (d) $K = N_2/N_1 = E_2/E_1 = I_1/I_2$
48. The transformation ratio (K) is more than 1 then the transformer is a _____
(a) Step up transformer (b) Auto transformer
(c) Step down transformer (d) Current transformer
49. A sinusoidal flux 0.02 wb (max) links with 56 turns of a transformer secondary coil. The supply frequency is 50 Hz. The rms value of the induced emf in the secondary will be _____
(a) 220 V (b) 244.2 V
(c) 440 V (d) 444.2 V
50. In 1 KVA transformer the number of turns per volt is 8. What is the number of turns in high voltage side, if the voltage is 110V?
(a) 1920 (b) 880
(c) 192 (d) 125
51. Primary winding has 450 turns and secondary winding has 90 turns. What will be the secondary voltage if the primary voltage is 220 volt?
(a) 45 (b) 44
(c) 42 (d) 40
52. When the number of turns of primary side of the transformer is 20 and the voltage ratio is 220/110V, the secondary number of turns will be _____
(a) 110 (b) 220
(c) 10 (d) 20
53. A single phase transformer has 600 turns on the primary and 80 turns on the secondary. If the primary connected to 3300 volt supply. The secondary voltage will be _____
(a) 340 Volt (b) 540 Volt
(c) 440 Volt (d) 430 Volt
54. What is the cause for producing humming noise in the transformer core?
(a) Over load of the transformer (b) Low rated voltage
(c) Insufficient clamping of laminated core (d) Misalignment of stamping
55. Which of the following parts of a transformer is visible from outside?
(a) Bushing (b) Core
(c) Primary winding (d) Secondary winding
56. If the input of the small transformer is 15 VA. What will be the output in VA when the efficiency is taken as 80%?

- (a) 15 VA (b) 12 VA
(c) 10 VA (d) 8 VA
57. A 5KVA, 400 V/ 200 V transformer delivers of 25 Amps in secondary. What is the current in primary side?
(a) 50 Amps (b) 25 Amps
(c) 17.5 Amps (d) 12.5 Amps
58. Calculate the current in low voltage side of the 1KVA, 240V/120V single phase transformer?
(a) 4.16 Amp (b) 6.72 Amp
(c) 8.33 Amp (d) 9.12 Amp
59. What is the full load current if 1KVA, 240V / 120V rated single phase transformer at 0.8 PF?
(a) 8.33 Amps (b) 6.66 Amps
(c) 4.16 Amps (d) 3.33 Amps
60. A 100KVA, 2400V/240V, 50HZ transformer has 300 turns on the secondary winding. Calculate the number of turn in the primary winding?
(a) 1500 Turns (b) 1800 Turns
(c) 2400 Turns (d) 3000 Turns
61. Part of transformer which is most subject to damage from overheating is _____
(a) Iron core (b) Copper winding
(c) Winding insulation (d) Frame or case
62. In which part of the distribution transformer, maximum heats occur?
(a) Transformer core (b) Transformer tank
(c) Transformer oil (d) L.V and H.V winding
63. What may be the cause for overheating of a transformer?
(a) High ambient temperature (b) Input voltage is too low
(c) Load is too high (d) Arc from transformer primary to Secondary
64. A sort of drum mounted on the top of the transformer with a level indicator is _____
(a) Conservator (b) Breather
(c) Explosion vent (d) Buchholz relay
65. The purpose of conservator tank in a transformer is to _____
(a) Monitor the oil level (b) Top up the oil level
(c) Both A & B (d) None of these
66. The changes in volume of transformer cooling oil due to variation of atmospheric temperature during day and night are taken care of by which part of transformer?
(a) Conservator (b) Breather
(c) Bushings (d) Buchholz relay
67. The chemical used in breather for transformer should have the quality of _____
(a) Ionizing air (b) Absorbing moisture
(c) Cleaning the transformer oil (d) cooling the transformer oil
68. Breathers _____
(a) Are used as dehydrating agent (b) Contain silica gel
(c) Contain 50% oil in cylindrical vessel (d) both (A) & (B)
69. The function of a breather in a transformer is _____
(a) To provide cooling air to winding (b) To arrest the flow of moisture into The tank
(c) To control the level of oil in the tank (d) to filter the transformer oil
70. Breathers are connected between _____
(a) Conservator and air outlet (b) Conservator and transformer oil
(c) Explosion vent and transformer winding (d) Conservator and silica gel
71. The transformer breather explosion vent diaphragm is enclosed with _____

- (a) Glass(b) Copper
(c)Zinc(d) Paper
72. Which of the following is not a part of transformer installation?
(a) Conservator (b) Breather
(c) Buchholz relay (d) Exciter
73. What is the material used inside the breather to prevent moisture entering the transformer?
(a) Sodium chloride (b) Sodium silicate
(c)Silica gel (d) Copper sulphate
74. The colour of the fresh silica gel used in breather of the transformer is _____
(a) Blue (b) White
(c) Green (d) Violet
75. What will be the colour of the silica gel, after it absorbs moisture from air?
(a) Blue (b) Brown
(c)Violet (d) Pink
76. A buchholz relay can be installed on _____
(a) Air cooled transformer (b) Air cooled transformer
(c) Oil cooled transformer (d) All of these
77. Buchholz relay is operated by _____
(a) Eddy current relay(b) Gas pressure
(c)Electromagnetic induction (d) Electro-static induction
78. The name of mercury switch used in a power transformer is _____
(a) Current relay (b) Buchholz's relay
(c) Voltage relay (d) Thermal relay
79. Buchholz's relay senses _____
(a) One fault (b) Two fault
(c) Three fault (d) four faults
80. Which of the following relays is used on transformer?
(a) Buchholz relay(b) MHO relay
(c) Merz price relay (d) none of these
81. Buchholz relay is generally used for the protection of _____
(a) Transmission line (b) Alternator
(c)Transformer (d) Motor
82. Oil is provided in an oil filled transformer for _____
(a) Insulation (b) Cooling
(c) Both Cooling and insulation (d) Lubrication
83. A common method of cooling a power transformer is _____
(a) Natural air cooling (b) Air blast cooling
(c)Oil cooling (d)any of these
84. In an auto transformer, the primary and secondary are _____ coupled.
(a) Only magnetically (b) Only electrically
(c)Magnetically as well as electrically (d)none of these
85. What is the working principle of auto transformer?
(a)Self-induction (b) Mutual induction
(c) DC motor principle (d) Fleming's left hand rule
86. The application of auto transformer is _____
(a) Series line booster (b) Commercial building
(c) Eliminator (d) Tong tester
87. Auto transformer are mainly used for _____
(a) Reduced voltage start to motor (b) Fluorescent lamp
(c)Low voltage testing equipment (d) CFL lamp
88. Secondary of a current transformer will have _____

- (a) More turn of thick gauge (b) Less turns of thin gauge
(c) More turns of thin gauge (d) less turns of thick gauge
89. Current transformer works on principle of _____
(a) Ohms law (b) Flemings left hand rule
(c) Faraday law of electromagnetic induction (d) none of these
90. What principle makes the instrument transformer working?
(a) Self-induction (b) Lenz's law
(c) Mutual induction (d) Fleming's right hand rule
91. Current transformer and potential transformer are used to increase the range of ____
(a) AC ammeter and voltmeter (b) DC ammeter and AC voltmeter
(c) DC ammeter and voltmeter (d) AC ammeter and DC voltmeter
92. The tap changer in an electrical power transformer is provided on _____
(a) LV winding (b) HV winding
(c) Either LV or HV winding (d) Both LV and HV winding
93. The transformer oil acidity value of 0.2 indicates the colour ____
(a) Black (b) Green
(c) Yellow (d) Orange
94. The transformer oil test voltage can be varied from _____
(a) 0 to 60 KV (b) 0 to 65 KV
(c) 0 to 67 KV (d) 0 to 69 KV
95. The regulation of a transformer increase with increase of _____
(a) Applied (b) Voltage drop in the winding
(c) Copper loss (d) Numbers of turn
96. Transformer efficiency is more because _____
(a) No copper losses (b) No iron losses
(c) No wind age and friction losses (d) No thermal losses
97. While conducting the short-circuit test on a transformer the _____ side is short circuited.
(a) HV side (b) LV side
(c) Primary side (d) Secondary side
98. The copper losses in transformer can be reduced by _____
(a) By changing the core material (b) By laminating the core
(c) By reducing the resistance of the Windings (d) All of these
99. What will be the copper loss at half load, of the full load copper loss in 1600 watts?
(a) 1600 watts (b) 800 watts
(c) 400 watts (d) 200 watts
100. Core of a transformer is laminated to reduce _____
(a) Hysteresis loss (b) Eddy current loss
(c) Copper loss (d) Wind age loss
101. In a transformer the tapings are generally provided on _____
(a) Primary side (b) Secondary side
(c) Low voltage side (d) High voltage side
102. Tap changer of transformer is given on the _____
(a) HV side (b) LV side
(c) Both (A) & (B) (d) None of these

Answer:- TRANSFORMER

13.C	14.A	15.A	16.B	17.B	18.C	19.C	20.B	21.C	22.B	23.B	24.B
25.B	26.A	27.A	28.D	29.A	30.B	31.D	32.A	33.A	34.A	35.C	36.D
37.C	38.D	39.C	40.B	41.B	42.A	43.D	44.B	45.A	46.D	47.D	48.A
49.B	50.B	51.B	52.C	53.C	54.C	55.A	56.B	57.D	58.C	59.A	60.D
61.C	62.A	63.C	64.A	65.C	66.A	67.B	68.D	69.B	70.A	71.A	72.D
73.C	74.A	75.B	76.C	77.B	78.B	79.B	80.A	81.C	82.C	83.C	84.C
85.A	86.A	87.A	88.C	89.C	90.C	91.A	92.B	93.B	94.A	95.B	96.C
97.B	98.C	99.C	100.B	101.D	102.A						

CONTROL PANEL

1. Bus bar should be installed at a height from the ground is
 A. 2.25 m B. 2.50 m C. 2.75 m D. 3.00 m
2. In industries number of machine are installed in a row . In such places overhead bus bar system is used for distribution of supply to each machine.
The recommended current density for a copper bus bar is.....
 A. 148 amps/cm² B. 156 amps/cm² C.165 amps/cm² D. 181 amps/cm²
3. In industries number of machine are installed in a row . In such places overhead bus bar system is used for distribution of supply to each machine.
The recommended maximum current density for an aluminum bus bar is.....
 A. 118 amps/cm² B. 156 amps/cm² C.165 amps/cm² D. 180 amps/cm²
4. Which material is used for wiring continuous bus bar ?
 A. Aluminum B. Copper C. Both A & B D. None of these
5. For bolts and nuts used for connecting aluminum bus bar shall be
 A. Tinned forged brass B. Iron C. Copper D. Steel
6. The minimum clearance between bus bar conductor of opposite polarity or phase conductor shall be
 A. 40 mm B.30 mm C. 25 mm D. 20 mm
7. The bus bar section are available in standard length of
 A. 3.50 m B. 3.55 m C. 3.60 m D. 3.65 m
8. Bus bar supports are spaced (maximum) apart is
 A. 500 mm B. 550 mm C. 600 mm D. 650 mm
9. For which among the following the current rating are not required ?
 A. Circuit breaker B. Relay C. Isolator D. Load break switch
10. Isolator can be used to open the circuit.....
 A. On fault B. Any time with load C. After opening load D. None of these
11. The protection switch can be protect against.....
 A. Short circuit B. Excessive temperature C. Over load D. Over voltage
12. A bus bar is rated by.....
 A. Current only B. Current and voltage only
 C. Current, voltage and frequency D. Current, voltage , frequency and short time current
13. Which one of the following is used for mounting the control accessories like MCB, OLR contactors etc , without using screw inside the control panel ?
 A. PVC raceways B. G channel C. leys D. Din rails
14. A insulator busing which is used to hold the cable when they pass through a hole of panel is called..
 A. Terminal connector B. Wire ferrules C. Nylon cable ties D. Grommets
15. A small plastic or rubber circular rings used to identified the ends of wire connected into a Terminals is called.....
 A. Terminal connector B. Wire ferrules C. Nylon cable ties D. Grommets

- ANSWER: CONTROL PANEL**

1. Which of the following is conventional source of energy?
(a)Coal (b)Solar
(c)Small hydro (d)Wind
2. Out of the following which one is NOT a non-conventional (Renewable) source of energy?
(a)Tidal energy(b)Geothermal energy
(c) Nuclear energy(d)Wind energy
3. The operating frequency (AC) of India is _____
(a)0 Hz(b)50 Hz
(c)60 Hz (d)100 Hz
4. The standard voltage of generation in India is _____
(a) 11 KV(b)33 KV
(c) 66 KV (d) 600 V
5. Which of the following is usually NOT the generating voltage?
(a)6.6 KV (b)9.9 KV
(c)11 KV(d)13.2 KV
6. The generating voltage and frequency in India is about _____
(a)11 KV and 60 Hz(b)11 KV and 50 Hz
(c)220 KV and 60 Hz(d) 220 KV and 50 Hz
7. Which of the following power plant does not require fuel?
(a)Atomic power station(b)Thermal power station
(c)Steam power station(d)hydroelectric power station
8. Which power plant is free from environmental pollution problems?
(a)Thermal power plant(b)Nuclear power plant
(c)Hydro power plant(d)geothermal energy power plant
9. Surge tank is located near the beginning of _____
(a)Tailrace (b)Penstock
(c)Spill way (d)Power house
10. In hydroelectric plant a conduct system for taking water from the intake works to the turbine is known as

- (a) Dam (b) Reservoir
(c) Penstock (d) Surge tank
11. A wheel fitted with elliptical buckets along its periphery is called as _____
(a) Conduit (b) Surge tank
(c) Nozzle (d) Pelton wheel
12. Overall efficiency of hydroelectric plant is about _____
(a) 25% (b) 55%
(c) 85% (d) 100%
13. In a fuel cell, electrical energy is produced by _____
(a) Reaction of hydrogen with oxygen (b) Thermionic action
(c) Combustion of fuel in the absence of oxygen (d) none of these
14. Lignite, bituminous and anthracite are different ranks of _____
(a) Nuclear fuel (b) Coal
(c) Natural gas (d) Biogas
15. Coal used in power plants is also known as _____
(a) Soft coal (b) Steam coal
(c) Coke (d) Charcoal
16. Which of the following is considered to be superior quality of coal?
(a) Bituminous (b) Coke
(c) Lignite (d) Peat
17. Equipment used for pulverizing the coal is known as _____
(a) Ball mill (b) Hopper
(c) Burner (d) Stoker
18. Coal used in thermal power plant has ash content of _____
(a) About 5% (b) About 10%
(c) About 20% (d) About 0%
19. The largest size of steam turbine installed in India is _____
(a) 100 MW (b) 250 MW
(c) 500 MW (d) 1000 MW
20. The efficiency of a thermal power plant is about _____
(a) 100% (b) 85%
(c) 80% (d) 35%
21. Which power plant normally operates at high speeds?
(a) Diesel engine plant (b) Petrol engine plant
(c) Steam turbine plant (d) hydroelectric power plant
22. In thermal power station boiler is used for _____
(a) Converting water into steam (b) Converting steam into water
(c) Converting water into ice (d) Converting ice into water
23. Economizer is used to heat _____
(a) Air (b) Flue gases
(c) Feed water (d) All of these
24. Pressure of steam in condenser is _____
(a) Atmospheric pressure (b) More than pressure
(c) Slightly less than pressure (d) much less than pressure
25. In a thermal power plant cooling towers are used to _____
(a) Condense low pressure steam (b) Cool condensed steam
(c) Cool water used in condenser for (d) Cool feed water of boiler
Condensing steam
26. The fuel used in nuclear generating power plant is _____
(a) Isotopes of uranium (b) Crude oil
(c) Liquefied hydrogen (d) Methane

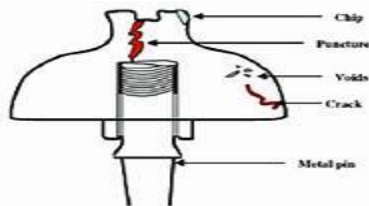
27. Which of the following is not used as moderator?
(a) Water (b) Heavy water
(c) Graphite (d) Boron
28. The function of a moderator is to _____.
(a) Absorb part of the kinetic energy of the neutrons (b) Extract the heat
(c) Reflect back some of the neutrons (d) start the reactor
29. Which type of pollution occurs when a large amount of heat is released by thermal generating stations?
(a) Thermal (b) Environmental
(c) Noise (d) All of these
30. The number of protons present in the nucleus of an atom is called _____.
(a) Electron (b) Mass number
(c) Neutron (d) Atomic number
31. The first nuclear power plant installed in India is _____.
(a) Rajasthan (Kota) (b) Tarapur (Maharashtra)
(c) Kalpakam (Tamilnadu) (d) Narora (Uttar-Pradesh)
32. In nuclear generating station process used in first step _____.
(a) Fission (b) Fusion
(c) Thermal (d) Mechanical
33. A diesel engine power plant is best suited as _____.
(a) Based load plant (b) Stand by plant
(c) Peak load plant (d) General purpose plant
34. Which of the following is not a bio mass source?
(a) Gobar gas (b) Coal
(c) Wood (d) Nuclear energy
35. Bagasse is _____.
(a) Low quality coal (b) A fuel consisting of wood
(c) Fibrous portion of sugarcane (d) A kind of rice husk
36. Both power and manure is provided by _____.
(a) Nuclear plants (b) Thermal plants
(c) Biogas plants (d) hydroelectric plants
37. The major constituent of biogas is _____.
(a) Carbon dioxide (b) Oxygen
(c) Nitrogen (d) Methane
38. Geothermal energy is _____.
(a) A renewable energy resource (b) Alternative energy source
(c) Inexhaustible energy source (d) any of these
39. The source of energy of the sun is _____.
(a) Nuclear fission (b) Chemical reaction
(c) Nuclear fusion (d) Photoelectric effect
40. Photovoltaic solar energy conversion system makes use of _____.
(a) Fuel cell (b) Solar cell
(c) Solar pond (d) solar collectors
41. Which power plant is free from environmental hazardous pollution problems?
(a) Thermal power plant (b) Nuclear power plant
(c) Wind power plant (d) All of these
42. Which of the following has the highest grid connected installed capacity _____.
(a) Solar (b) Biomass
(c) Wind (d) Small hydro
43. The energy radiated by the sun on a bright sunny day is approximately _____

- (a) 700 W/m^2 (b) 800 W/m^2
 (c) 1 k W/m^2 (d) 2 k W/m^2
44. Which of the following is an advantage of wind as a prime source of energy?
 (a) Unpredictable (b) Unsteady
 (c) Non-renewable (d) None of these
45. Horizontal axis and vertical axis are the types of _____
 (a) Nuclear energy (b) Wind mills
 (c) Biogas reactor (d) Solar cell
46. Energy from gravitational field is energy obtained from _____
 (a) Wind (b) Biomass
 (c) Coal (d) Tides
47. Which of the following is a disadvantage of a tidal power station?
 (a) High cost of civil works (b) Power generation is intermittent
 (c) Variation in low and high tide timings (d) All of these
48. By which of the following systems electric power may be transmitted?
 (a) Overhead system (b) Underground system
 (c) Both (A) & (B) (d) None of these
49. Voltage produced at the output of a generator at power station is sent to transmission line by using a _____
 (a) HV transmission line (b) Step down transformer
 (c) Step up transformer (d) Unity isolating transformer
50. Which of the following is NOT the transmission voltage in America?
 (a) 66 KV (b) 132 KV
 (c) 264 KV (d) 400 KV
51. Lightning arrestors used to divert the over voltage surges from _____
 (a) Line to earth (b) Line to line
 (c) Line to ACB (d) Line to OCB
52. EHT stands for _____
 (a) Extra high terminal (b) Extra high tension
 (c) Extra high thermostat (d) Equipment high tension
53. As per I.E rule medium voltage line is _____
 (a) 0 to 230 Volt (b) 230 to 650 Volt
 (c) 650 to 1000 Volt (d) Above 1000 Volt
54. What is the range of extra high voltage?
 (a) 650 to 33 KV (b) 250 V to 650 V
 (c) Up to 250 V (d) Above 33 KV
55. The maximum permissible voltage drop in a 230 V network is 3%. What is the minimum acceptable voltage in any point of the network?
 (a) 225.1 V (b) 227 V
 (c) 223.1 V (d) 220 V
56. What is the permissible voltage drop of the 11 KV underground cables?
 (a) 137.5 V (b) 13750 V
 (c) 1375 V (d) 330 V
57. Which of the following system is not a sub system of an electrical energy system?
 (a) Distribution system (b) Protection and control system
 (c) Transmission system (d) none of these
58. The conductors of the overhead lines are mainly _____
 (a) Solid (b) Stranded
 (c) Hollow (d) none of these
59. Why are the conductors used for higher voltage transmission stranded?

- (a)Ease of handing (b)Cheaper cost
(c)Reduced resistivity (d) Increase in tensile strength
60. Which among these properties are not suitable for the conductor materials?
(a)High electrical conductivity (b)High specific gravity
(c)Lower cost (d) High tensile strength
61. The ACSR conductor used for overhead transmission has full form as _____
(a)Aluminium conductor steel (b)Active conductor sheathed reinforced Reinforced
(c)Active conductor steel (d) Aluminium conductor steel Reinforced restructured
62. Which material is used for the manufacture of ground wire?
(a)Aluminium (b)Galvanised steel
(c)Cast iron (d)Stainless steel
63. What will be the span length of RCC poles in OH lines?
(a) 40 to 50 mts(b)30 to 50 mts
(c)60 to 100 mts(d) 100 to 300 mts
64. ACSR conductors are joined by _____
(a) Twisted joint(b)Britannia straight joint
(c)Britannia joint(d)Compression joint
65. Overhead system can be designed for operation up to _____
(a)11 KV (b)33 KV
(c)66 KV (d) 400 KV
66. Which among these is NOT the component of overhead transmission lines?
(a)Conductors(b)Cross arms
(c)Danger plates (d) Transformers
67. In transmission lines we usually use cross arms made of _____
(a)Aluminium(b)Copper
(c)Steel (d) RCC
68. Galvanised steel wire is generally used as _____
(a)Stay wire(b)Earth wire
(c)Structural component (d)All of these
69. High voltage transmission lines use _____
(a)Suspension insulators (b)Pin insulators
(c)Both (A) & (B) (d) none of these
70. Transmission line string insulators are mainly made of _____
(a)Glass (b)Porcelain
(c)Iron (d)P.V.C
71. The maximum voltage level of pin type insulator can be used is up to ____ KV
(a)11(b)33
(c)66(d)132
72. Which of the following systems uses the 3 phase 4 wire system?
(a)Primary distribution (b) Secondary distribution
(c)Primary transmission (d) Secondary transmission
73. What is the type of insulators used at dead ends and on straight lines as suspension type for voltages 3.3 KV and above?
(a)Stay insulators (b)Strain insulators
(c) Pin insulators (d)Disc insulators
74. One disc of strain insulator can sustain _____
(a) 22 KV (b)11 KV
(c)33 KV(d) 440 V
75. A 3 phase 4 wire system is commonly used for _____

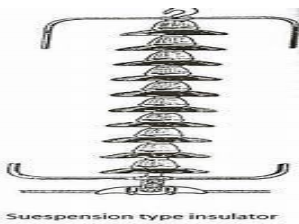
- (a)Primary distribution(b)Secondary distribution
(c)Primary transmission (d)Secondary transmission
76. The voltage of the single phase supply to residential consumers is _____
(a) 110 V (b)210 V
(c)230 V (d)400 V
77. The most suitable way of providing electric supply to a multi-storey building is by means of _____
(a)Rising main(b)Overhead line
(c)Paper insulated cable (d)PVC insulated armoured cable
78. Boosters are basically _____
(a)Inductors (b) Capacitors
(c)Transformers (d) Synchronous motor
79. In a transmission system the feeder supplies power to _____
(a)Transformer substation (b) Service mains
(c)Distributors (d)All of these
80. Which distribution system is more reliable?
(a)Ring main system (b)Radial system
(c)Inter connected system(d) Network sys

81. What is the name of the insulator? |



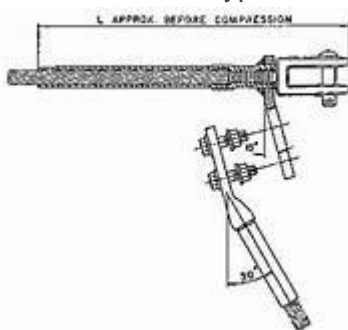
- A Stay insulator | B Shackle insulator |
C Suspension insulator| D Single shed pin insulator

82. What is the name of line insulator?



- A Pin type insulator | B Disc type insulator
C Shackle type insulator | D Suspension type insulator

83. What is the type of over head line joint?



- A Twisted joint | B Straight sleeve joint |
C Compression joint for ACSR | D Straight joint through connectors

84. Transient fault will occur in OH power lines due to _____

- a. Lightning strike
- b. Heavy rain
- c. Cable fault
- d. Over load

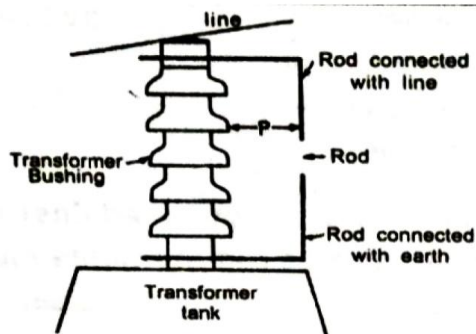
85. The lightning arrester consists of lead peroxide coated pellets of 2.4 mm diameter arranged in column of _____

- a. 11.0 cm in diameter
- b. 11.1 cm in diameter
- c. 11.2 cm in diameter
- d. 11.3 cm in diameter

86. Pellet type lead peroxide arrester acts as an insulator if the temperature exceeds _____

- a. 150°C
- b. 155°C
- c. 160°C
- d. 165°C

87. What is the name of the lightning arrester shown in fig?



- a. Horn gap arrester
 - b. Rod gap arrester
 - c. Multi gap arrester
 - d. Protector Tube
88. Horn-gap arrestors are inferior because they prone to _____

- a. Voltage
- b. Corrosion
- c. Current
- d. Resistance

89. The lightning arrestors to protect the substation from is installed on _____

- a. HT side
- b. Primary side
- c. LT side
- d. Secondary side

90. Lightning arrestors used to divert the over voltage surges from _____

- a. line to earth
- b. line to line
- c. line to ACB
- d. line to OCB

91. The protective device against lightning over voltage is / are _____

- a. Rod gaps
- b. Surge absorber
- c. Horn gap
- d. All of these

92. Among tungsten silver, tin and copper, minimum current chopping level of the electrode in vacuum circuit breaker will be for _____

- a. Tungsten
- b. Tin
- c. Silver
- d. Copper

93. To protect a structure against direct strokes following three requirements must be fulfilled _____

- a. Interception, conduction, dissipation
- b. Interception, convention, dissipation

c. Induction, conduction, dissipation d. Induction, convention, dissipation

94. Location of lightning arrester is near a _____

- a. Generator b. Transformer
- c. Bus-bar d. Circuit breaker

95. The 11 KV supply is connected through a gang isolator known as _____

- a. TPIC switch b. AB switch
- c. DPIC switch d. OCB switch

96. What is the possible cause, if the circuit breaker is tripping immediately?

- a. Generators are damaged b. Drain plug is loose
- c. Shunt trip is energized d. No supply to the motor

97. A mechanism which is incorporated in the circuit breaker to switch off it at faulty condition is known as _____

- a. spring press mechanism b. trip mechanism
- c. solenoid operated mechanism d. air pressure operated mechanism

98. What is the marking to breaking current ratio for extra high voltage circuit breaker?

- a. More than 1 b. Less than 1
- c. Equal to 1 d. A negative value

99. Which of the following circuit breaker is preferred for EHT application?

- a. Air blast circuit breaker b. Minimum oil circuit breaker
- c. Bulk oil circuit breaker d. SF6 oil circuit breaker

100. Voltages ranges of SF6 circuit breakers vary from _____

- a. 3 KV to 30 KV b. 45 KV to 60 KV
- c. 60 KV to 110 KV d. 115 KV to 500 KV

101. The single most property of SF6 for circuit breaking is _____

- a. No toxic b. Non-inflammable
- c. High electronegative in character d. High insulation

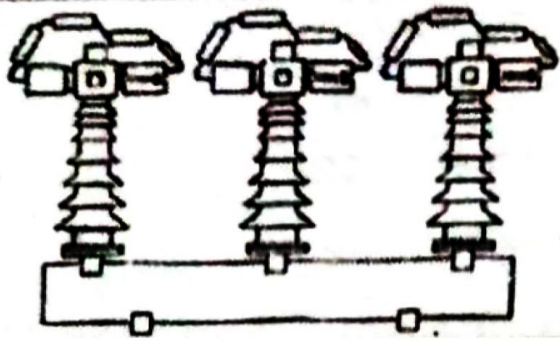
102. SF6 gas is _____

- a. Sulphur fluoride b. Non-inflammable
- c. Sulphur hexa do-fluoride d. Sulphur hexafluoride

103. Air blast circuit breaker is used in substation of _____

- a. Outdoor b. Indoor
- c. Anywhere d. None of these

104. Which type of circuit breaker is shown in the figure?



- a. Air break circuit breaker
 - b. Oil circuit breaker
 - c. Air blast circuit breaker
 - d. Miniature circuit breaker
105. The OCB is installed on the _____
- a. HT side
 - b. LT side
 - c. Primary side
 - d. Secondary side
106. The OCB stands for _____
- a. Oil circuit breaker
 - b. Over circuit breaker
 - c. Oil current breaker
 - d. Over current breaker
107. Which circuit breaker is generally used in railway traction?
- a. SF6 circuit breaker
 - b. Air break circuit breaker
 - c. Vacuum circuit breaker
 - d. Minimum oil circuit breaker
108. The medium employed for extinction of arc in air circuit breaker is _____
- a. SF6
 - b. Oil
 - c. Air
 - d. Water
109. Low voltage circuit breakers have rated voltage of less than _____
- a. 220 V
 - b. 400 v
 - c. 1000 V
 - d. 10000 V
110. Bulk oil circuit breaker can be used for voltage up to _____
- a. 66 KV
 - b. 33 KV
 - c. 11 KV
 - d. 1.1 KV
111. No. of poles in MCB (TPN) is _____
- a. 2 poles
 - b. 4 poles
 - c. 3 poles
 - d. 5 poles
112. A circuit breaker will normally operate _____
- a. When the switch is put on
 - b. When the line is to be checked
 - c. When the power is to be supplied
 - d. whenever fault in the line occur
113. The acting contact of the circuit breaker is made up of _____
- a. Copper tungsten alloy
 - b. Porcelain
 - c. Aluminium alloy
 - d. Electrolytic copper
114. What is the actuating quantity for the relays?
- a. Magnitude
 - b. Frequency
 - c. Phase angle
 - d. All of these
115. Protective relays can be designed to respond to _____

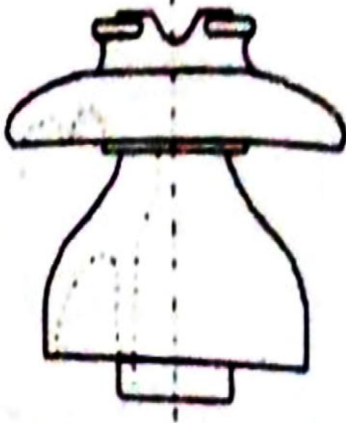
- a. Fault current
 - b. Temperature
 - c. Resistance, reactance or impedance
 - d. All of these
116. Metal conductors used for substation grounding systems are made of _____
- a. Steel, aluminium, nickel
 - b. Steel, copper, brass
 - c. Copper, steel, aluminium
 - d. Copper, steel, nickel
117. For power factor correction in substation is done by _____
- a. Inductor
 - b. Capacitor
 - c. Synchronous motor
 - d. Both B & C
118. As compared to single bus-bar, a duplicate bus-bar has the drawback of _____
- a. Poor reliability
 - b. Greater cost
 - c. Lesser flexibility of operation
 - d. All of these
119. In a substation current transformers are used to _____
- a. Measuring purpose
 - b. Protection purpose connecting to relays
 - c. Both (A) & (B)
 - d. None of these
120. What is the advantage of UG cable distribution over OH distribution?
- a. Initial cost is high
 - b. Cost of joints are more
 - c. Maintenance is easy
 - d. Not affected by storm
121. In a substation the equipment used to limit short circuit level is _____
- a. Series reactor
 - b. coupling capacitor
 - c. Lightening switch
 - d. Isolator
122. In a power substation subsystem _____
- a. Power transmitted
 - b. Power distributed
 - c. Consists of switching between different subsystems
 - d. Electrical energy is obtained from a primary source of energy
123. Transmission and distribution of electric power by underground system is superior to overhead system in respect of _____
- a. Appearance and public safety
 - b. Maintenance cost
 - c. Frequency of faults, power failure & accidents
 - d. All of these
124. Following set of voltages is allowed for high voltage power transmission commercially available in India _____
- a. 220 KV, 400 KV, 700 KV
 - b. 220 KV, 400 KV, 765 KV
 - c. 110 KV, 400 KV, 700 KV
 - d. 110 KV, 400 KV, 765 KV
125. What is the function of secondary distribution substation?
- a. It steps down 11 KV to 415 KV
 - b. It steps up 11 KV to 132 KV
 - c. It steps down 132 KV to 66 KV
 - d. It steps down 33 KV to 11 KV
126. Which of the following is NOT the distribution system normally used?
- a. 3 phase - 4 wire
 - b. 3 phase – 3 wire
 - c. Single phase – 3 wire
 - d. Single phase – 4 wire

127. Service connection to consumer premises is provided either through overhead or through underground cable by tapping from OH line. Service connection line should be tapped from OH line at _____
- a. Mid span only
 - b. Any point along the span
 - c. A point of support
 - d. A point one meter away from support
128. Which type of insulator is shown in the figure?

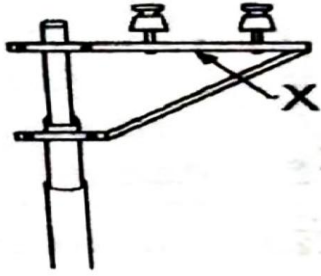


- a. Pin type insulator
- b. Disc insulator
- c. Shackle insulator
- d. Stay insulator

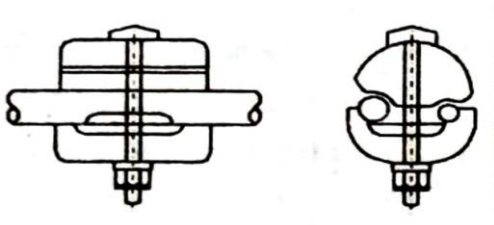
129. The name of the insulator shown in figure?



- a. Single shed pin insulator
 - b. Double shed pin insulator
 - c. Triple shed pin insulator
 - d. Shackle type insulator
130. What is the name of the part indicated as 'X' in the figure?



- a. Cross arm
b. Cross arms
c. Danger plates
d. Transformers
131. Which among these is NOT the component of overhead transmission lines?
a. Conductors
b. Cross arms
c. Danger plates
d. Transformers
132. What will be the span length of RCC poles in OH lines?
a. 40 to 50 mts
b. 30 to 50 mts
c. 60 to 100 mts
d. 100 to 300 mts
133. What is the name of overhead line's connector shown in figure?



- a. Standard P.G clamps
b. Universal P.G clamps
c. Nut connector
d. Split bolt connector
134. Which of the following is used for connecting copper wire to aluminium conductors in consumer service connections?
a. Standard P.G clamps
b. Universal P.G clamps
c. Nut connector
d. Split bolt connector
135. By which of the following systems electric power may be transmitted?
a. Overhead system
b. Underground system
c. Both (A) & (B)
d. None of these
136. Which type of joint is shown in figure?



- a. Twisted joint
b. Britannia straight joint
c. Britannia T joint
d. Compression joint
137. The difference in level between points of supports A&B and the lower point on the conductor is known as _____
a. Sag
b. Corona

GENERATION, TRANSMISSION & DISTRIBUTION

[illegible]