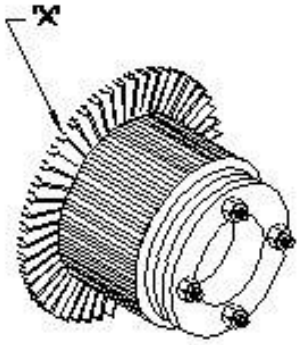
Multiple Choice Practice Questions for ONLINE/OMR AITT-2020 2nd Year Electrician Trade Theory

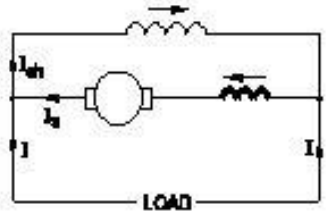
DC machine (Generator & Motor)

1 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

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



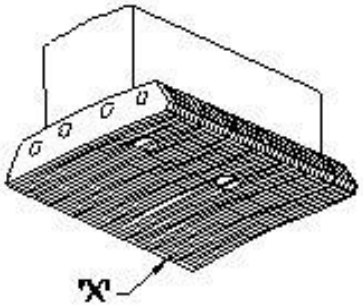
A- Differential long shunt compound B- Differential short shunt compound C -Cumulative long shunt compound D -Cumulative short shunt compound

3 Which rule is used to find the direction of induced emf in D.C generator?
A- Cork screw rule B -Right hand palm rule C -Fleming’s left-hand rule D -Fleming’s right hand rule

4 Which formula is used to calculate the generated emf in D.C generator?
A –ZNPa/60ϕ B -ϕZna/60P C - ϕZnp/60a D - ϕZnp/60

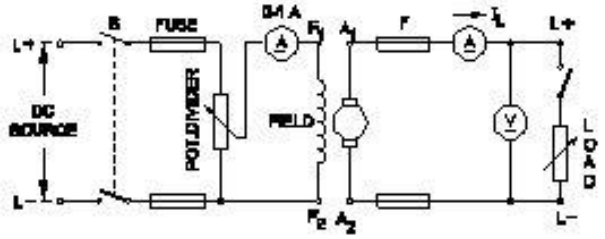
5 What is the formula to calculate back emf of a D.C motor?
A -Eb = V/Ia Ra B- Eb = V x Ia Ra C -Eb = V – Ia Ra D -Eb = V + Ia Ra

6 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

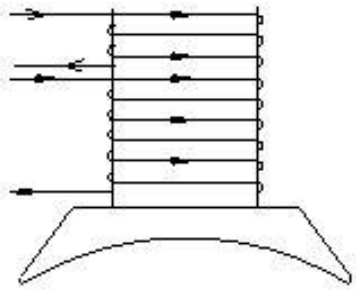
7 What is the name of the D.C generator given below?



A -Shunt generator B -Series generator C- Compound generator D -Separately excited generator

8 Which energy is converted into electrical energy by generator?
A -Heat B- Kinetic C -Chemical D -Mechanical

9 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

10 What is the principle of D.C generator?
A -Cork screw rule B -Fleming's left-hand rule C -Fleming's right hand rule D -Faradays laws of electromagnetic induction

11 What is the formula for dynamically induced emf?

A- BLV volts B- BL sinθ volts C- BLV sinθ volts D- BLV cosθ volts

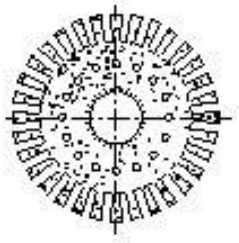
12 Which rule is used to find direction of magnetic field?
A- Cork screw rule B -Right hand palm rule C- Fleming's left hand rule D- Fleming's right hand rule

13 What is the name of the part of DC generator given below?

A- Stator B -Pole core C -Pole shoes D -Yoke (or) frame

14 How many parallel paths in duplex lap winding of a 4 pole DC generator?
A - 4 B- 6 C -8 D -12

15 Name the part of DC generator given below?



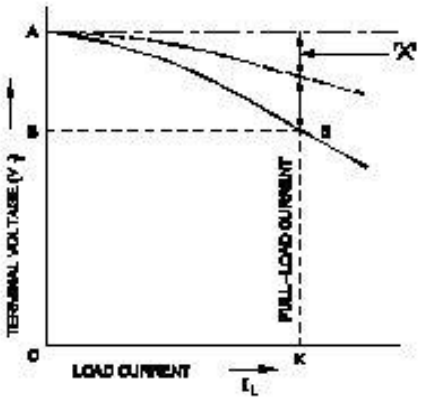
A -Side end plates B- Pole shoe lamination C -Commutator segment D -Armature core lamination

16 How inter poles are connected in a DC generator?
A- In series with armature B- In parallel with armature C- In series with shunt field D- In parallel with shunt field

17 What is the necessity of residual magnetism in a self excited DC generator?
A -Build up the voltage B- Reduce the field current C- Reduce armature current D- Maintain constant output voltage

18 Which are the two points that the brush contact resistance measured in D.C machines?
A- Resistance between the opposite brushes B -Resistance between brush and commutator raiser
C- Resistance between brush and commutator D- Resistance between brush and armature conductors

19 Which voltage drop is indicated in the portion marked as X given below?



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

20.What is the name of the compound generator, if the shunt field is connected in parallel with armature?
A Long shunt compound | B -Cumulative compound C -Differential compound D -Short shunt compound

21 Why the armature core of a DC generator is laminated?
A -Reduce the copper loss B -Reduce the friction loss C- Reduce the hysteresis loss D -Reduce the eddy current loss

22 Why armature resistance of a D.C generator is very low?
A- Reduce armature current B -Reduce armature voltage drop C- Run armature with less weight D -Reduce the temperature of armature

23 Why the D.C generator should run in clockwise direction only?
A- Protect brushes from damage B -Protect the residual magnetism C -Avoid short circuit in armature D -Avoid over loading of generator

24 Why compensating winding is provided in large DC generators?
A -Connect more loads B -Reduce commutation effect C -Neutralize armature reaction effect D- Increase the efficiency of generator

25 What is the reason for DC generator fails to build up voltage?
A- Loose brush contact B -Armature resistance is more C -Field resistance is above critical resistance D -Prime mover is running at above rated speed

26 What is the name of generator, if its field is connected in parallel with armature?
A -Shunt generator B -Series generator C -Compound generator D -Self excited generator

27 What is the purpose of pole shoe in DC generator?
A -Reduce the air gap B- Increase the field strength C -Minimize the magnetic losses D -Spread out flux uniformly in the air gap

28 What is the function of slip rings in DC generator?

A -Maintain constant voltage B -Collects the current unidirectional C -Reduces the voltage drop at brushes D -Increases the terminal voltage than rated

29 Which material is used to make brush in generator?
A -Steel and graphite B -Carbon and graphite C -Cast iron and D -Aluminium and graphite

30 Why DC generators are loosing their residual magnetism?
A -Heavy short circuit in load B -Running without load continuously C -Continuous running without break D -Change of direction of rotation very often

31 How does the magnetic circuit complete through the yoke and poles in a generator?
A -Field coils B- Armature core C -Laminated pole core D- Winding conductors in armature

32 Why the terminal voltage decreases if load increases in DC shunt generator?
A- Because of armature reaction effect B -Due to increased in armature resistance C -Because of brush voltage drop decreases D- Due to increased in shunt field inductance

33 Which type of DC generator is used for long distance distribution lines?
A -Shunt generator B -Series generator C -Differential compound generator D- Cumulative compound generator

34 Which method is used to improve the insulation resistance in DC generator?
A -Replacing the brushes frequently B- Heating the machine by running periodically C -Cleaning the commutator segments regularly D -Blowing hot air in to the machine during maintenance

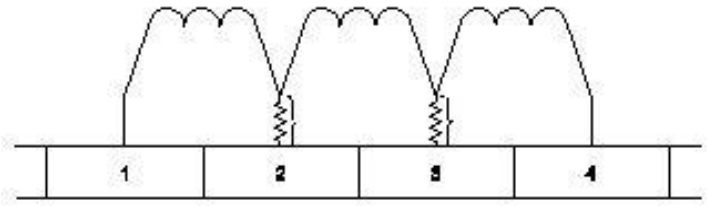
35 Which type of D.C Generator works in absence of residual magnetism?

A -Shunt generator B -Series generator C -Compound generator D -Separately excited generator

36 Which type of D.C generator is used for arc welding?
A -Shunt generator B -Series generator C -Differential compound generator D -Cumulative compound generator

37 What is the property of wave winding in D.C generator?
A -Low current low voltage B- High current low voltage C- Low current high voltage D -High current high voltage

38 What is the purpose of resistance wire used in the commutator connection in D.C generator given below?



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

39 Why solid pole shoes are used in D.C generator?
A- To reduce the copper loss B -To increase the residual magnetism C -To decrease the residual magnetism D -To reduce the reluctance of magnetic path

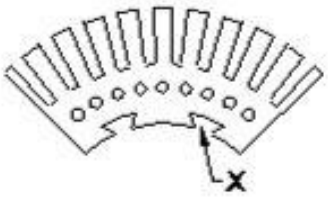
40 Which metal is used to make large capacity DC generator yoke?
A -Cast iron B -Soft iron C- Aluminium D -Rolled Steel

41 What is the function of slip rings in a D.C generator?
A -Supplies output continuously B -Makes output in the uni direction C -Makes output in the opposite direction D -Collects the output from alternate conductors

42 Which type of voltage is induced dynamically in a D.C generator?

A -Pulsating voltage B -Oscillating voltage C - Alternating voltage D- Direct current voltage

43 What is the purpose of slot marked as ‘X’ given below**?**



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

44 What is the purpose of field coils in D.C generator?
A -To increase the flux in air gap B -To decrease the magnetizing current **C -**To magnetize the poles to produce coil flux D -To increase the reluctance of magnetic path

45 Which metal is used to make pole core of large DC generator ?
A- Soft iron B -Cast iron C -Cast steel D -Stainless steel

46 Why the pole core stampings are laminated in DC generator?
A -Reduce the friction loss B -Reduce the windage loss C -Reduce the hysteresis loss
D -Reduce the eddy current loss

47 Which type of DC generator is used for electroplating process?
A- Shunt generator B -Series generator C -Differential compound generator D -Cumulative compound generator

48 What is the purpose of compensating winding in DC generator?
A -Minimizes rough commutation B -Maintain constant output voltage C -Neutralizes the demagnetizing effect D -Decreases the excitation current of field coils

49 What is the effect if the shunt field resistance is above critical resistance value in a D.C generator?

A- Output voltage is pulsating B- Output voltage is above normal C- Generator fails to build up voltage D- Generator builds up voltage normally

50 What is the effect of armature reaction in DC generator?
A- Output voltage increases B -Output voltage decreases C- Output voltage is pulsating
D- Output voltage will become zero

51 Calculate the emf genarated in a 4 pole DC generator with simplex wave wound armature has 1020 conductors and driven at a speed of 1500 rpm, the flux / pole is 0.007 webers?
A- 178 V B -243 V C -357 V D -428 V

52 How the effect of armature reaction can be neutralized in large DC generators?
A- Using compensating winding B- Providing additional inter poles C- Increasing brush contact resistance D- Adding resistance wires with winding

53 What is the effect in D.C generator, if it is kept ideal for long time?
A- Field coil resistance increases B -Armature resistance increases C -Increase the armature reaction D- Looses its residual magnetism

54 Calculate the induced emf of 4 pole dynamo having 1000 rpm lap wound and total number of conductors is 600, the flux / pole is 0.064 wb?
A- 160V B- 320V C- 480V D- 640V

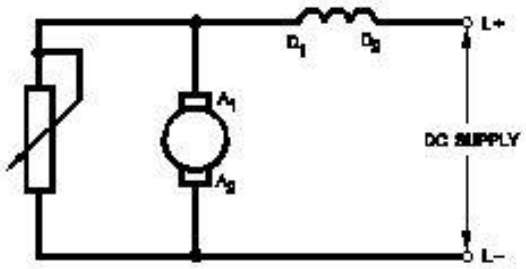
55 What is the effect on induced emf if the main field flux get distorted in DC generator?
A- Induced emf increases B- Induced emf decreases C- No change in induced emf
D- Induced emf becomes zero
56 What is the cause for heavy sparking in brushes of DC generator?

A- Short circuit in field winding B- Short circuit in armature winding C- MNA and GNA position changed D- Too much spring tension at brush

57 Which instrument is used to measure armature winding resistance?
A- Megger B- Multimeter C- Series type Ohm meter D- Kelvin bridge

58 Which instrument is used to test armature winding for short and open circuit?
A- Tong Tester B- Internal Growler C- External Growler D- Digital multimeter

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



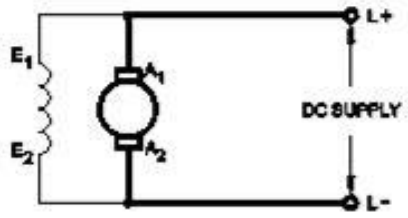
A- Field diverter method B- Field tapping method C- Voltage control method D- Armature diverter method

60 Which winding wire is used for DC field coil?
A- Super enameled copper wire B- Single silk covered copper C- Double silk covered copper wire D- PVC covered copper winding wire

61 Which formula is used to calculate the speed of DC motor?
A -$N = Eb/\phi$ B- $N = \phi/Eb$ C- $N = Eb.\phi/120$ D -$N = Eb.\phi/160$
62 How many parallel paths in duplex lap winding in the armature of 4 pole D.C Motor?
A- 2 B- 4 C- 6 D- 8

63 Which rule determines the direction of rotation of armature in D.C motor?
A- Right hand grip rule B- Right hand palm rule C- Fleming's left hand rule D- Fleming's right hand rule

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



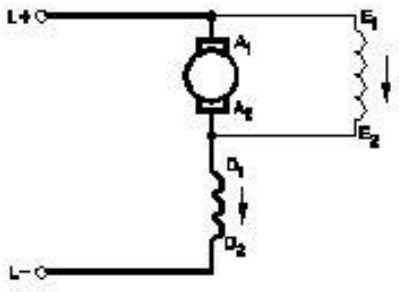
A- D.C shunt motor B- D.C series motor C- D.C differential compound motor D- D.C cumulative compound motor

65 Which rule determines the direction of current in D.C motor?
A -Right hand grip rule B- Right hand palm rule C -Fleming's left hand rule D- Fleming's right hand rule

66 What is the formula to calculate the current taken by D.C shunt motor armature?
A) Ia=Va/Ra B) Ia=Eb/Ra c) Ia=(V-Eb)/Ra D) Ia=(V+Eb)/Ra

67 Which rule is applied to identify the direction of flux in DC motor?
A- Cork's screw rule B- Right hand grip rule C- Fleming's left hand rule D- Fleming's right hand rule

68 Name the type of DC motor.

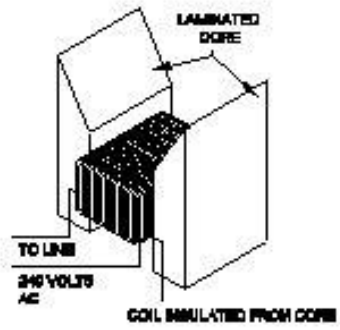


A- Shunt motor B- Series motor C- Long shunt compound motor D -Short shunt compound

69 What is the formula to calculate back EMF in a DC motor?

A –ZNPa/60ϕ B -ϕZna/60P C - ϕZnp/60a D - ϕZnp/60

70 What is the name of the equipment given below?



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

71 What is the name of winding, if coil pitch is less than pole pitch?
A- Full pitch winding B- Half pitch winding C -Long chorded winding D- Short chorded winding

72 What is the purpose of series resistor connected with holding coil in a D.C four point starter? A- Limit the current in holding coil B- Increase the current in holding coil C- Increase the voltage in holding coil l D- Decrease the voltage in holding coil

73 Which speed control method of D.C series motor is used for electric train?
A- Field diverter method B- Field tapping method C- Armature diverter method D- Supply voltage control method

74 Why shunt field coil is connected in series with holding coil in D.C three point starter?
A- Increase the holding coil current B- Decrease the holding coil current C- Protect the shunt field from over current D- Protect the motor in case of open in shunt field

75 Why the direction of rotation is changed only by changing the armature current direction in a D.C compound motor?
A- Maintain rated speed B- Maintain motor characteristics C- Avoid armature reaction effect
D -Prevent motor from over loading

76 Which speed control methods offers below normal speed in DC shunt motor?
A- Field control method B- Voltage control method C- Armature control method D- Ward Leonard system of speed control

77 Why starters are required to start D.C motors in industries?

A -Regulate the field voltage B- Reduce the armature C- Control the armature reaction
D- Smooth operation of motors

78 Which insulating material belongs to class ‘B’ insulation?
A- Cotton B -Bamboo C- Fiber glass D- Leatheroid paper

79 What is the temperature value of class ‘F’ insulation?
A -90°C B -105°C C -120°C D -155°C

80 Which type of D.C motor is used for constant speed drives?
A -DC series motor B- DC shunt motor C- Differential long shunt compound motor
D- Differential short shunt compound motor

81 Which type of DC motor is used in elevators?
A- DC series motor B- DC shunt motor C- DC differential compound motor
D- DC cumulative compound motor

82 Which method of speed control gives below the rated speed in DC series motor?
A- Field diverter method B- Tapped field method C- Voltage control D- Armature diverter method

83 What is the effect, if a four point starter resistance is cutoff during running?

A- Motor stopped B- Runs at slow speed C -Runs at very high speed D -Runs at reverse direction

84 Why carbon composition brush requires in the armature circuit to operate the D.C motor?
A- Increases the starting torque B- Protects from armature reaction C- Protects armature from over loading D- Reduces the spark in the commutator segment

85 Why series motor produce high torque and speed initially without load?

A- Absence of back emf B- Load current flows through field winding C- Armature current and field current are same D- Series field winding wound with thick wire

86 Why the series field is short circuited at the time of starting in differential compound motor? A- To reduce the starting current B -To increase the speed of motor C- To decrease the speed of motor D- To maintain proper direction of rotation

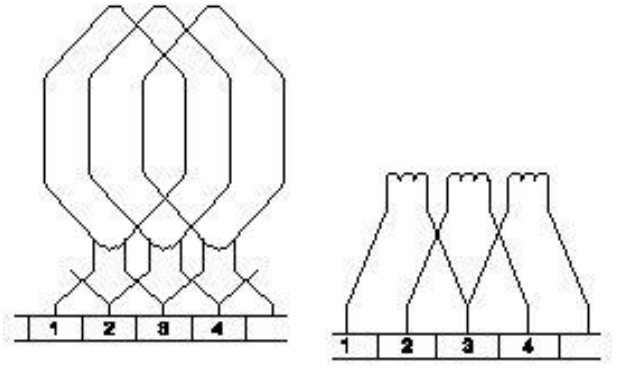
87 Which is the most effective method of balancing armature?
A- Static balancing B- Dynamic balancing C -Attached with counter balancing D- Plugged with lead weight balancing

88 Which material is used for starting resistance of DC starters?
A- Eureka B -Nichrome C -Manganin D -Constantine

89 Which DC compound motor is operated at constant speed under varying load?
A- Differential long shunt B -Cumulative long shunt C- Differential short shunt D- Cumulative short shunt

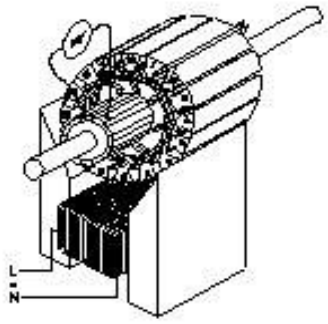
90 How No volt coil is connected in a three point starter with DC shunt motor?
A- Directly connected to supply B -Connected in series with armature C -Connected in parallel with armature D -Connected in series with shunt field

91 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

92 Which growler test for armature is illustrated given below?



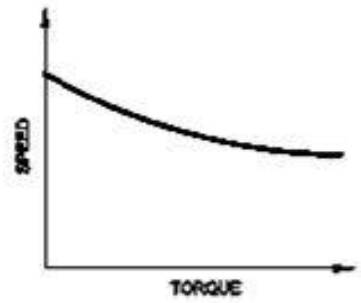
A -Open coil test B- Grounded coil test C -Shorted coil test D- Shorted commutator test

93 Which speed control method is applied to obtain both below normal and above normal speed in DC motor?
A- Field control method B -Armature control method **C-** Tapped field speed control D- Ward Leonard speed control

94 Why commutators are sparking heavily?
A- Incorrect brush position B-Incorrect field connection C- Incorrect direction of rotation D- Incorrect armature connection

95 What is the action of the induced emf in a running D.C motor?
A- Assists the applied voltage B- Opposes the applied voltage C- Increases the armature current D- Decreases the armature current

96 Which motor has this characteristics curve given below?



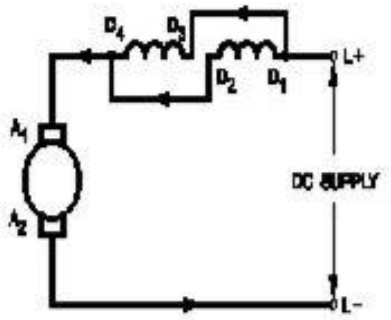
A- Series motor B- Shunt motor C- Cumulative compound motor D- Differential compound motor

97- What is the purpose of resistor connected with holding coil in 4 point starter?
A -Limit current in NVC B- Protect the coil from short circuit C- Protect the motor from overload D- Protect the armature from short circuit

98- Why the D.C series motor field winding is wound with thick wire?

A- To regulate field voltage B- To carry the load current C- To keep maximum inductance D- To reduce the armature reaction

99- 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

100- Which type of D.C motor is suitable for shearing machines?
A -Shunt motor B- Series motor C- Cumulative compound motor D- Differential compound motor

101- Where D.C compound motors are preferred?
A- Constant load requirements B -Constant speed requirements C- High starting torque requirements D- Constant speed under varying load requirements

102- What is the necessity of starter for D.C motor?
A- Limit the field current B- Limit the field voltage C- Control the motor speed D- Limit the armature current

103- Which type of instrument is used to test the armature winding?
A- Megger B -Growler C- Multimeter D- Ohmmeter

104- Why the holding coil of a 3 point starter is connected in series with shunt field?

A- To limit the load current B- To run motor at low voltage C -To hold the handle plunger firmly D -To protect the motor from high speed

105- What is the best method to change the DOR of a compound motor without change of its characteristics?
A- Change armature current direction B- Change shunt field current direction C- Change series field current direction D- Change the current in armature and shunt field together

106- What is the purpose of NVC connected in series with the field in 3 point starter?
A- To improve the torque B- Reduce the field current C -To decrease the back emf D- To prevent increase in speed

107- Which type of DC motor is used for sudden application of heavy loads?
A- Shunt motor B- Series motor C- Differential compound motor D- Cumulative compound motor

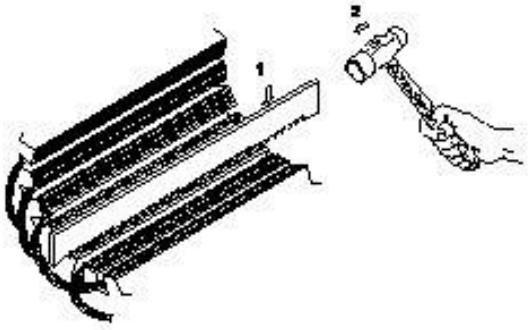
108 -Which speed control method is used in food mixture motors?
A -Voltage control method B -Field diverter control method C- Armature diverter method D -Series field tapping method

109- Which speed control system provides a smooth variation of speed from zero to above normal?
A- Field control B -Armature control C- Field diverter control D- Ward-Leonard system control

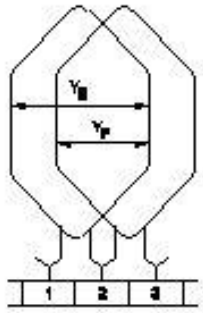
110 -What is the purpose of tapes in winding?
A- Insulate slots B- Bind the coils C- Wrap the conductor D- Insulate exposed conductors

111- Which type of DC armature winding the front pitch (YF) is greater than back pitch (YB)?
A- Lap winding B- Wave winding C- Progressive winding D- Retrogressive winding

112- What reduces the cross sectional area of core material for VA rating?
A) Dynamo sheet B) Low alloy sheet C) High alloy sheet D) Normal steel sheet
113- How to obtain opposite polarity in adjacent poles of a 4 pole DC motor?
A) Varying the number of turns in coil B)Making series connection of coils
C) Making parallel connection of coils D) Making current flow in different direction
114- 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
115- Which insulating material used in winding is a highly non -hygroscopic and possess good electrical strength?
A) Empire cloth B) Triplex paper C) Millinex paper D) Leatheroid paper
116- Which type of armature winding is illustrated given below?

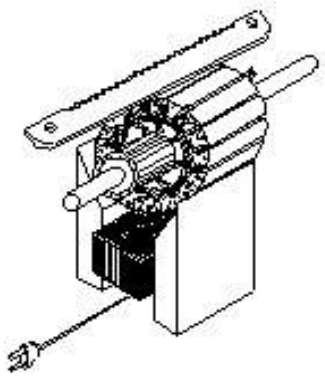


A) Triplex wave winding B) Duplex wave winding C) Progressive lap winding D) Retrogressive lap winding

117 Calculate the average pitch (YA) for retrogressive wave winding, if No. of armature conductor = 14 No. of slots = 7 No. of poles = 2

118 Which type of test is illustrated for the armature after rewound?
A- Open coil test B- Shorted coil test C -Voltage drop test D- Grounded coil test

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



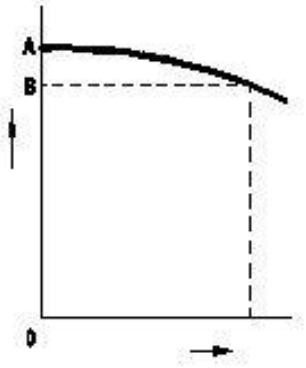
A- Drive out the moisture from it B- Help for quick drying of varnish C- Make easy to penetrate varnish inside D- Maintain uniform spreading of varnishing

120 How the direction of rotation of a DC compound motor is changed?
A- By changing the direction of armature current B- By interchanging the supply terminals
C -By changing the direction of both field and armature current D- By changing the direction of series field current

121 What is the effect in a D.C shunt motor, if its supply terminals are interchanged?
A- Runs in slow speed B- Runs in high speed C- Runs in the same direction D- Runs in the reverse direction

122 What is the speed, if field winding of a DC shunt motor is in open circuit?
A- Stop running B- Motor runs normally C- Runs at slow speed D- Runs in very high speed

123 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

124 Which winding fault is determined by the test?
A- Open coil fault B -Short coil fault C- Grounded coil fault D- Grounded core fault

ANSWER

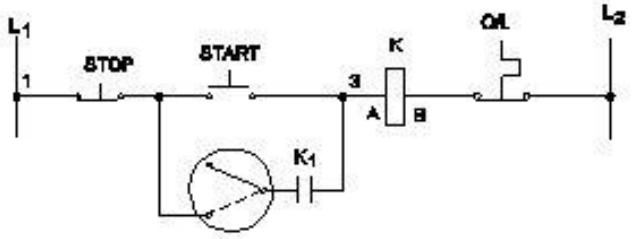
DC machine (Generator & Motor)

1 - C | 2 - A | 3 - D | 4 - C | 5 - C | 6 - D | 7 - D | 8 - D | 9 - C |10 - D | 11 - C | 12 - D | 13 - D | 14 - C|
15 - D | 16 - A | 17 - A | 18 - C | 19 - C | 20 - D | 21 - D | 22 - B | 23 - B | 24 - C | 25 - C | 26 - A |
27 - D | 28 - B | 29 - B | 30 - D | 31 - B | 32 - A | 33 - D | 34 - D | 35 - D | 36 - C | 37 - C | 38 - D |
39 - D | 40 - D | 41 - B | 42 - C | 43 - A | 44 - C | 45 - C | 46 - D | 47 - A | 48 - C | 49 - C | 50 - B |
51 - C | 52 - A | 53 - D | 54 - D | 55 - B | 56 - C | 57 - D | 58 - C | 59 - D | 60 - A | 61 - A | 62 - A |
63 - C | 64 - A | 65 - D | 66 - C | 67 - C | 68 - D | 69 - C | 70 - D | 71 - D | 72 - A | 73 - A | 74 - D |
75 - B | 76 - C | 77 - B | 78 - C | 79 - D | 80 - B | 81 - D | 82 - D | 83 - B | 84 - D | 85 - A | 86 - D |
87 - B | 88 - A | 89 - B | 90 - D | 91 - A | 92 - A | 93 - D | 94 - A | 95 - B | 96 - C | 97 - A | 98 - B |
99 - A | 100 - C | 101 - D | 102 - D | 103 - B | 104 - D | 105 - A | 106 - D | 107 - D | 108 - D |
109 - D | 110 - C | 111 - D | 112 - C | 113 - D | 114 - C | 115 - C | 116 - C | 117 - B | 118 - B |
119 - A | 120 - A | 121 - C | 122 - D | 123 - C | 124 - A |

AC. 3 phase Motor

1 -What is the formula to calculate the slip speed (N slip) of 3 phase squirrel cage induction motor?
A- N slip = $Ns - Nr$ B –N slip = $Nr - Ns$ C- N slip = $Ns{-}Nr\ /Nr$ D- N slip = $Ns{-}Nr/\ Ns$

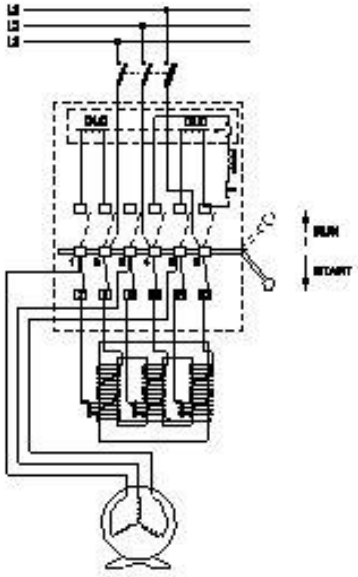
2- What is the type of control circuit given below ?



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

3- Which formula is used to calculate the total electrical degree in stator of an A.C motor?
A- Total electrical degree = 180° / No. of slots B- Total electrical degree = 180° x No. of slots C- Total electrical degree = 180° / No. of poles D- Total electrical degree = 180° x No. of poles

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



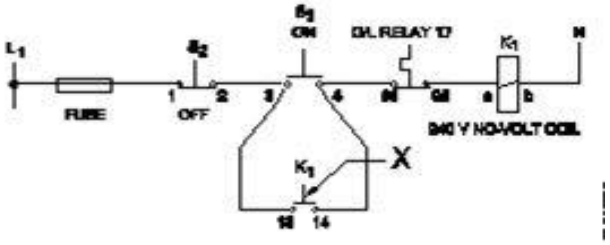
A- DOL starter B- Auto transformer starter C- Semi automatic star delta starter
D- Fully automatic star delta starter

5- What is the formula to find synchronous speed of a A.C 3 phase induction motor?
A- Synchronous speed= $120F/\ P$ B- Synchronous speed= $120P/\ F$
C- Synchronous speed = $120\ P/F$ D -Synchronous speed = $PF/\ 120$

6- What is the fuse rate to run a 10 HP three phase induction motor at full load?

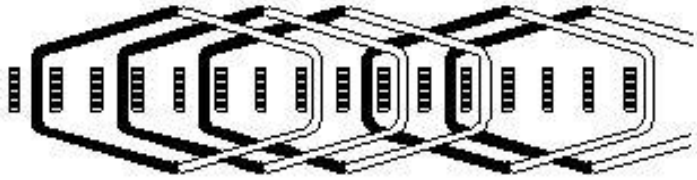
A- 10 A B- 15 A C- 25 A D- 30 A

7- 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

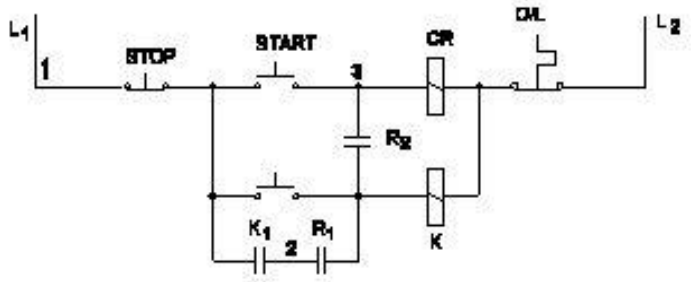
8- What is the type of A.C motor stator winding given below?



A- Single layer basket winding B- Double layer basket winding C- Involute coil winding
D -Diamond coil winding

9- Which formula is used to calculate percentage slip of an AC 3 phase induction motor?
A- $Ns-Nr/Ns\ x$ 100 B -$Nr-Ns/Ns\ x$ 100 C- $Ns-Nr/Nr\ x$ 100 D- $Nr-Ns/Nr\ x$ 100

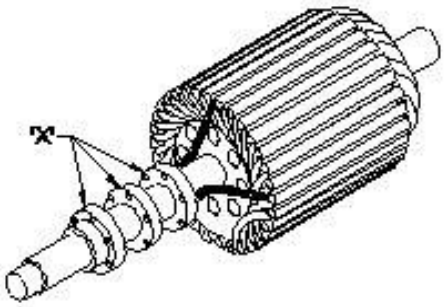
10 Which operation the control circuit is used given below?



A -Remote control B -Inching C -Sequential control D- Forward and reverse

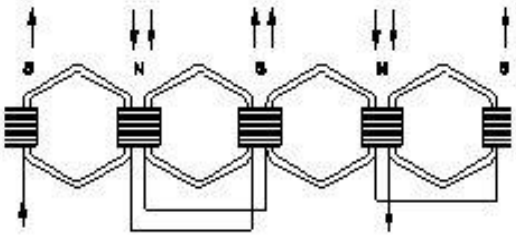
11 What is the phase displacement between windings in 3 phase motor?
A -90° B- 120° C -180° D- 360
°

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



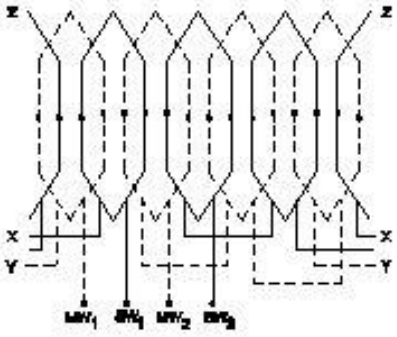
A- Shaft B- Brushes C- Bearings D -Slip rings

13 What is the name of AC coil winding given below?



A- Half coil winding B- Whole coil winding C -Single layer winding D -Double layer winding

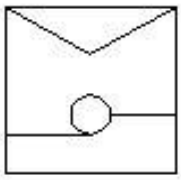
14 What is the name of the coil winding given below?



A -Concentric coil winding B -Distributed coil winding C- Mesh shaped coil winding
D -Diamond mesh shaped coil winding

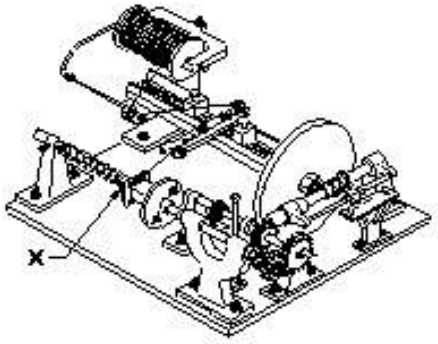
15 Which speed is called as synchronous speed in 3 phase induction motor?
A- No load speed B- Full load speed C- Rotating magnetic field speed
D- Relative speed between stator and rotor

16 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

17 Name the part marked as X of the winding machine given below?



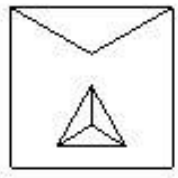
A- Mandrel B -Wire feed C- Wire guides D- Spool carrier

18 What is the electrical degree of 6 pole stator of motor?
A- 360° B- 720° C- 1080° D- 1440°

19 Calculate the number of coils per phase per pair of poles of 3 phase motor having 2 pole, 24 slots,12 coils?

A- 1 B- 2 C- 3 D- 4

20 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

21 What is the formula to calculate pitch factor?
A. Pitch factor = pole pitch/winding pitch
B. Pitch factor =winding pitch/ pole pitch
C. Pitch factor =no of slot/no of pole
D. Pitch factor = no of pole /no of slot

22 How pole pitch is measured in terms of slots in AC winding?
A- degree electrical Total /no of slot
B- no of slot/A degree electrical Total
C- no of slot in stator/no of pole.
D- no of pole/no of slot in stator

23- What is the formula to calculate the mean circumference of the coil?

A) ($Lout-Lin$)/ 2 cm B) ($Lin+Lout$)/2 cm C)Lm=2/($Lout-Lin$) cm D) 2/($Lin+Lout$) cm

24 What is the synchronous speed of a A.C 3 phase induction motor having 6 poles at a frequency of 50 Hertz?
A- 800 rpm B- 1000 rpm C -1200 rpm D- 1440 rpm

25 Calculate the percentage slip in a 3 phase induction motor having 6 poles with a frequency of 50 Hertz rotating with actual speed of 960 rpm?
A- 2% B- 3% C -4% D -5%

26 What is the rotor frequency of a 3 phase squirrel cage induction motor at the time of starting?
A- Equal to supply frequency B- 3 times less than supply frequency C- 3 times more than supply frequency D- $\sqrt{3}$ times less than supply frequency

27 How the voltage is received in the rotor of induction motor?

A- Direct connection from stator B- Due to back emf produced in stator
C -Direct connection to rotor from supply D- By the transformer action of stator and rotor

28 Which method is applied to control the speed of 3 phase squirrel cage induction motor from its rotor side?
A- Cascade operation B- Changing applied voltage C- Changing applied frequency
D- Changing the number of poles

29 Which loss of 3 phase induction motor is determined by blocked rotor test?
A- Copper loss B- Friction loss C- Hysteresis loss D- Eddy current loss

30 Why pre heating is necessary for motors before varnishing in rewinding process?
A- To dry the varnish quickly in winding B- To easy flow of varnish in the winding
C -To increase the insulation resistance value D- To drive out the moisture in between winding layers

31 Which type of test is conducted using internal growler in AC motor winding?
A- Ground test B- Polarity test C- Continuity test D- Short circuit test

32 Which device is used to test stator winding short and open fault?
A- Tong Tester B- Internal Growler C- External Growler D- Digital multimeter

33 What is the purpose of using thermal cutout in addition to fuse in A.C motor circuit?
A- Protect from heavy load B -Protect against high voltage C- Allow for continuous over loading
D- Protect against dead short circuit

34 Which type of motor is used to provide high starting torque at variable speed?

A- Universal motor B- Permanent capacitor motor C- 3 Phase slip ring induction motor D -3 Phase single squirrel cage induction motor

35 What is the relation between torque and slip in an A.C induction motor?
A- Slip increases torque decreases B- Slip increases torque increases C -Slip decreases torque increases D- Slip decreases torque decreases

36 What is effect of A.C induction motor if rotor bar is in open circuit?
A- Vibration of shaft B- Motor will not start C- Runs in slow speed D- Over heating of motor

37 Which type of wire is used for rewinding of A.C 3 phase motors?
A- Super enameled copper wire B- PVC covered copper winding wire C- Single cotton covered copper wire D- Double cotton covered copper wire

38 Which material is used as wedges in winding process?
A- Empire B- Cotton C- Bamboo D- Terylene

39 Which test in winding is essential before giving supply?
A- Ground test B- Polarity test C -Open circuit test D -Short circuit test

40 Why the rotor bars are mounted in a slightly skewed position in 3 phase motor?
A- Generate maximum flux B- Reduce the stray losses C- Maintain the rotor speed constant D- Produce more uniform rotor field and torque

41 Which loss is determined by no load test of 3 phase induction motor?
A- Iron loss B- Copper loss C- Friction loss D- Windage loss

42 Which method of speed control two variable speeds only obtained in 3 phase motor?

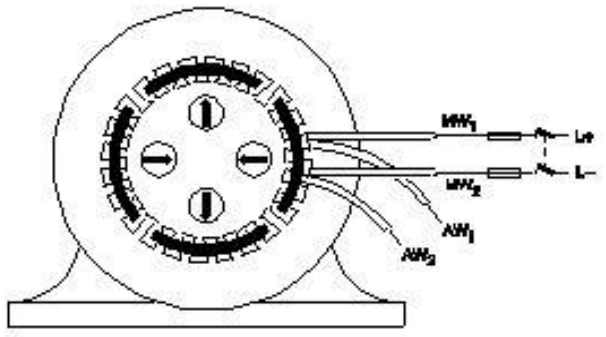
A -By rotor rheostat control B- By changing applied frequency C- By changing the applied voltage D- By changing the number of stator poles

43 Why slip ring induction motor is fitted with wound rotor?
A- To reduce the slip B- To control the speed C- To reduce the losses D- To get high starting and running torque

44 What is the function of timer in automatic star delta starter?
A- Trip at over load B- Switch ON at pre set time C- Change from star to delta D -Switch OFF at pre set time

45 Which instrument is used to measure insulation resistance of a 3 phase induction motor?
A- Megger B- Multimeter C -Shunt type ohmmeter D- Series type ohmmeter

46 Which test in winding is illustrated given below?



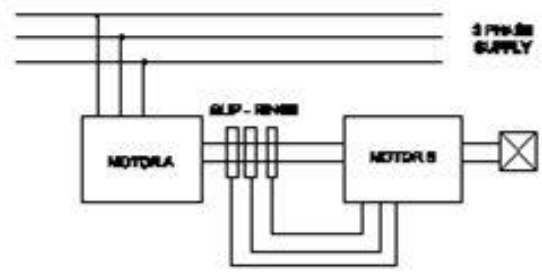
A- Polarity test B- Ground test C- Continuity test D- Short circuit test

47 What is the starting current of an A.C 3 phase induction motor?

A- 1 to 2 times of full load current B- 2 to 3 times of full load current C- 4 to 5 times of full load current D- 5 to 6 times of full load current

48 Which method is used to control the speed of 3 phase induction motor from stator side? A- By cascade operation B- By rotor rheostat control C -By injecting emf in rotor circuit D -By changing the applied frequency

49 What is the speed control method of 3 phase induction motor given below?



A- Cascade operation method B- Rotor rheostat control method C -Changing applied voltage method D- Injecting emf in rotor circuit method

50 What are the two functional circuits incorporated with a three phase motor starter?
A- Open circuit and short circuit B- Closed circuit and open circuit C- Short circuit and closed circuit D -Control circuit and power circuit

51 Which is the main property of leatheroid paper insulation?
A- Non moisturized material B- Highly non-hygroscopic C- Very good for class F insulation D- Better ageing and dielectric strength

52 Which type of insulating material is selected for binding the coils and over hangs?
A -Cotton sleeves B- Empire sleeves C- Terylene thread D- Fiber glass tape

53 Which insulation is used for cuffing in AC winding?
A- Fiber glass tape B -Leatheroid paper C- Empire fiber glass tape D- Fabric based adhesive tape

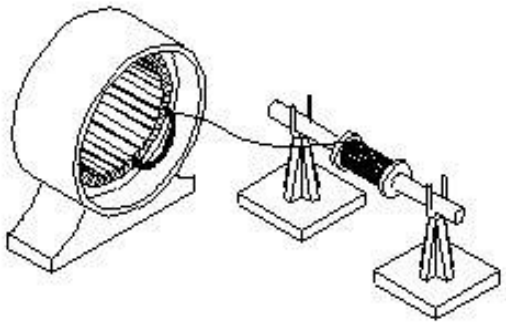
54 What refers coil in AC winding?
A- Number of turns connected in series B- Number of turns connected in parallel
C- Number of turns under two similar poles D- Number of turns under two dissimilar poles

55 Which type of AC winding the number of coil/pole/phase is more than one at different pitches?

A- Involute coil winding B- Diamond coil winding C- Flat loop over lapped winding
D Flat loop non-over lapped winding

56 Calculate the number of coils /phase/ pole for a 3 phase double layer distributed winding for a motor having 36 slots, 36 coils and 4 poles?
A- 3 coils /phase/ pole B- 6 coils / phase/pole C- 9 coils / phase/pole D- 12 coils/ phase/ pole

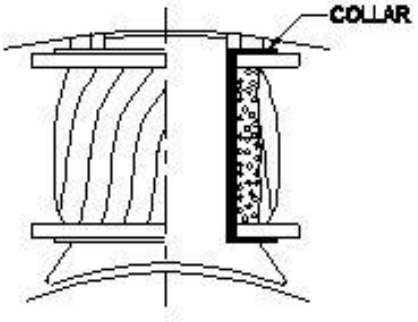
57 What is the type of rewinding process given below?



A- Hand winding B -Skein winding C -Former winding D- Machine winding

58 Which type of starter is used to start and run the 3 phase slip ring induction motor?
A- Direct on-line starter B- Rotor rheostat starter C- Auto transformer starter
D- Manual star-delta starter

59 What is the function of collar given below?



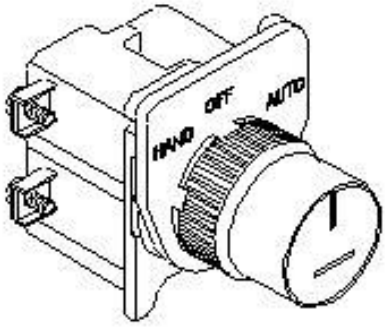
A- Provides insulation around field B -Provides insulation for coil tapping C- Helps tightening material for flange D- Provides insulation for heat transfer from coil

60 Which type of winding wire is used to wind submersible pump motors?
A- PVC covered type B -Terylene thread type C- Super enameled type D- Double cotton covered type

61 What is the reason of long chord winding is avoided in AC motors?
A- Low efficiency B- Low starting torque C -More winding wire required D- Less heat dissipation
62 Which type of winding has more space for cooling?
A- Between overhanging coils B- Between overhanging coil and rotor C- Between overhanging coils and yoke D -Between overhanging coil and wedge

63 Where the panel boards are used?
A- Industrial motor drives B- Domestic wiring circuits C -3 phase domestic wiring
D- Load distribution for AC & DC supply

64 Determine the torque in newton metres produced by a 7.5 HP squirrel cage motor rotating at 1440 rpm?
A- 21.63 Nm B- 24.4 Nm C- 33.05 Nm D- 36.6 Nm
65 Which type of handle design of rotary switch is illustrated given below?

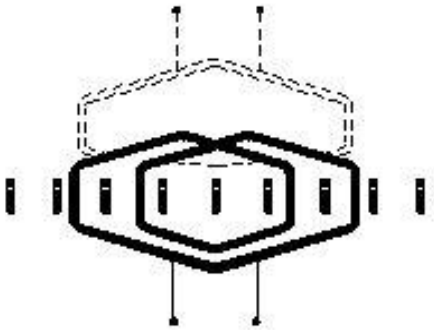


A- Knob B- Lever C -Coin slot D -Key operation

66 What is the purpose of using rotor resistance starter to start 3 phase slip ring induction motor?
A- Reduce rotor voltage B -Reduce rotor current C -Increase the torque D -Reduce the power loss

67 Which method of speed control is only applicable for 3 phase slip ring induction motor? ? A- Cascade operation method B- Rotor rheostat speed control C -Changing the applied frequency method D- Changing the number of stator poles method

68 What is the name of the winding given below?

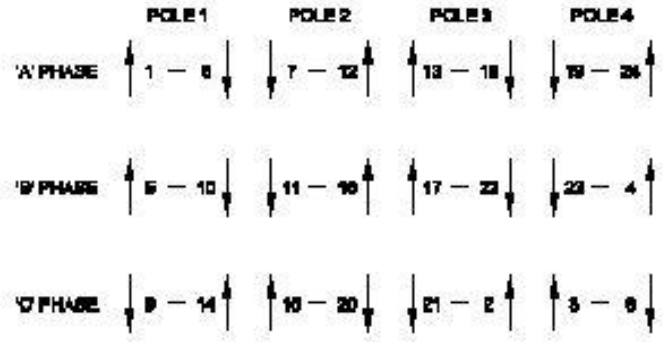


A -Skew winding B -Skein winding C -Involute coil winding D- Diamond coil winding

69 What is the name of 3 phase motor winding, if the coil pitch is less than pole pitch?
A- Full pitch winding B- Whole coil winding C- Long chorded winding D- Short chorded winding

70 Which is the demerit of 3 phase concentric winding?
A -More space is required B- A stepped former is C- More difficult to shape the coils uniformly D- It is not easy to make the end connection

71 What is the name of the diagram used for 3phase motor winding given below?

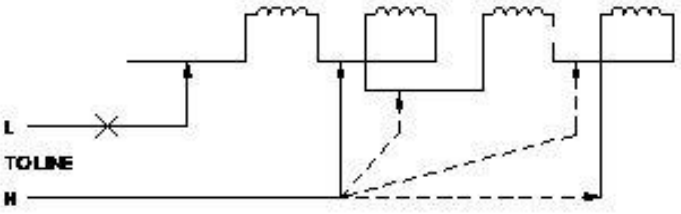


A- Ring diagram B -Development diagram C- Coil connection diagram D- End connection diagram

72 Calculate the phase displacement in terms of slots for a 3 phase, 36 slots, 12 coils, 4 pole stator winding?
A 3 slots B 4 slots C 6 slots D 8 slots

73 Which type of AC motor winding having the number of coil/pole/phase is more than one arranged in different slots?
A- Basket winding B- Concentric winding C- Distributed winding D- Concentrated winding

74 Which type of testing of winding is illustrated given below?



A- Polarity test B- Resistance test C- Short circuit test D- Voltage drop test

75 Why external resistance is included in the rotor circuit at starting through 3 phase slip ring induction motor starter?

A- To get high running torque B- To get high starting torque C- To reduce the load current D -To get increased speed at starting

76 What is the effect of motor, if the rotor windings in slip ring induction motor is open circuited at starting?
A- Will not run B- Runs at slow speed C- Runs at very high speed D- Runs but not able to pull load

77 What happens to a 3 phase induction motor if one phase fails during running?
A- Motor runs normally B- Motor stop instantaneously C- Motor runs slowly, finally it burns D -Motor runs with irregular speed

78 What is the effect on 3 phase induction motor if one phase is cut-off during running with load?
A- Motor stops at once B- Motor will run normally C- Motor runs with humming noise with slow speed D- Motor will run slow speed but winding will be burnt out shortly

79 What is the defect, if starter with single phasing preventer does not switch ON?
A- Improper phase sequence B- Fluctuations in line voltage C- Loose contact in supply lines
D- Wrong terminal connections at motor

80 What is the defect in AC 3 phase induction motor runs at low speed if loaded?
A- Wrong motor connection B- Wrong starter connection C- Open circuit in rotor winding
D -Partially shorted stator winding

81 Which fault condition thermal overload relay protects A.C induction motor?
A- Short circuit B- Open circuit C- Over current D- Under voltage

82 What happens to the rotor of a 3 phase induction motor if its speed attains to synchronous speed?
A- Rotor speed reduce B- Rotor speed increases C- Rotor speed remains same
D- Rotor bars get damaged

83 What is the effect of open circuit in rotor of an induction motor?
A- Motor does not start B -Over heating in motor C- Excess vibration of shaft D -Motor runs with very low speed

84 What is the reason for frequent blowing of fuse after motor running some time?
A- Improper earthing B- Over loading of motor C -Heavy voltage fluctuation
D- Poor insulation in winding

85 What happens to a 3 phase induction motor, if one phase fails during starting?
A- Motor runs and stop immediately B- Motor runs in slow speed continuously C- Motor runs and draws more current D- Motor continues to run with irregular speed

86 Which is the cause for the 3 phase motor starter with single phase preventer trips frequently?
A -Incorrect fuse ratings B- Unbalanced line voltage C- Incorrect settings of OLR
D- Improper phase sequence

87) What indication denotes the shorted coil defect in 3 phase motor stator winding while testing with internal growler by keeping hacksaw blade?
A- Hacksaw blade gets over heated B- Rapid vibration of hacksaw blade
C -Hacksaw blade repels against the slots D- Attracted by the winding turns on the slot

88 The frequency of the rotor current in a 3 phase 50 Hz, 4 pole induction motor at full load speed is about ?
(A) 50 Hz. (B) 20 Hz .(C) 2 Hz. (D) Zero.

89 The power factor of a squirrel cage induction motor is ?
(A) low at light load only.(B) low at heavy load only.(C) low at light and heavy load both.(D) low at rated load only.

90 In a 3 – phase induction motor the maximum torque ?
(A) is proportional to rotor resistance r2 .(B) does not depend on r2 .(C) is proportional to flux .
(D) is proportional to r 2 .

91 The relative speed between the magnetic fields of stator and rotor under steady state

operation is zero for a ?
(A) dc machine. (B) 3 phase induction machine. (C) synchronous machine. (D) single phase induction machine .(E) all options are correct

92 A balanced three-phase, 50 Hz voltage is applied to a 3 phase, 4 pole, induction motor. When the motor is delivering rated output, the slip is found to be 0.05. The speed of the rotor m.m.f. relative to the rotor structure is ?
(A) 1500 r.p.m. (B) 1425 r.p.m. (C) 25 r.p.m. (D) 75 r.p.m.

93 A 50 Hz, 3-phase induction motor has a full load speed of 1440 r.p.m. The number of poles of the motor are ?
(A) 4. (B) 6. (C) 12. (D) 8.
94 In a 3-phase synchronous motor ?
(A) the speed of stator MMF is always more than that of rotor MMF.(B) the speed of stator MMF is always less than that of rotor MMF.(C) the speed of stator MMF is synchronous speed while that of rotor MMF is zero.(D) rotor and stator MMF are stationary with respect to each other.

95- Slip of the induction machine is 0.02 and the stator supply frequency is 50 Hz. What will be the frequency of the rotor induced emf?
(A) 10 Hz. (B) 50 Hz. (C) 1 Hz. (D) 2500 Hz

96 The rotor frequency for a 3 phase 1000 RPM 6 pole induction motor with a slip of 0.04 is _Hz
(A) 8 (C) 6 (B) 4 (D) 2
97 The synchronous speed for a 3 phase 6-pole induction motor is 1200 rpm. If the number of poles is now reduced to 4 with the frequency remaining constant, the rotor speed with a slip of 5% will be . ?
(A) 1690 rpm (B) 1750 rpm (C) 1500 rpm (D) 1710 rpm

98 A 3-phase, 400 volts, 50 Hz, 100 KW, 4 pole squirrel cage induction motor with a rated slip of 2% will have a rotor speed of ?
(A) 1500 rpm (B) 1470 rpm (C) 1530 rpm (D) 1570 rpm

99 A 400kW, 3-phase, 440V, 50Hz induction motor has a speed of 950 r.p.m. on full load. The machine has 6 poles. The slip of the machine will be . ?
(A) 0.06 (B) 0.10 (C) 0.04 (D) 0.05

100 Other name of 3 phase induction motor ?
(A)Series motor (B) universal motor (C)asynchronous motor (D) synchronous motor

ANSWER

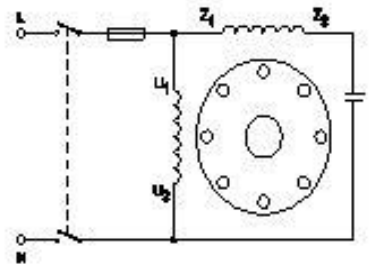
AC. 3 phase Motor

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

AC Single Phase Motor

1- What is the working principle of single phase induction motor?
A -Lenz's law B- Joule's law C- Faraday's laws of electrolysis D- Faraday's laws of electromagnetic induction

2- 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

3-What is the working principle of split phase motor?
A- Lenz's law B- Joule's law C -Faraday's laws of electrolysis D- Faraday's laws of electromagnetic induction

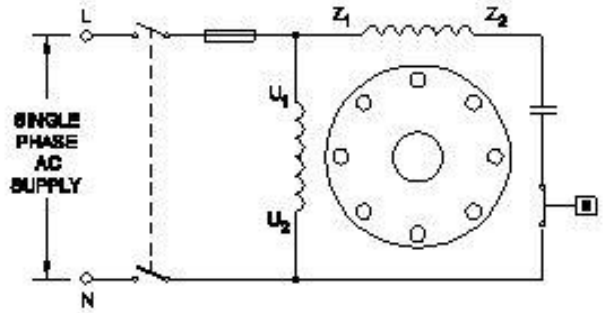
4- In which motor follow Faraday's laws of electromagnetic induction ?

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

5- Which type of A.C single phase motor is classified under commutator motor type?
A- Stepper motor B- Repulsion motor C -Shaded pole motor D -Permanent capacitor motor

6- Which method is adopted to start the single phase induction motor?
A- Split phase method B- Varying supply voltage method C- Reversal of input supply terminals D- Reversal of running coil connection

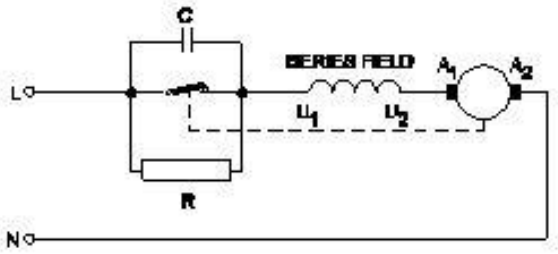
7- What is the type of A.C single phase motor given below?



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

motor D- Capacitor start induction run motor

8- 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

9- Which type of winding wire is used for rewinding submersible pumps?
A -PVC covered copper wire B- Super enameled copper wire C- Single cotton covered copper wire D- Double cotton covered copper wire

10 -Which type of AC single phase motor having low starting torque?
A- Induction start induction run motor B- Capacitor start induction run motor C- Capacitor start capacitor run motor D -Resistance start induction run motor

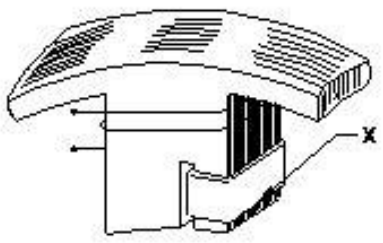
11- What is the function of centrifugal switch in single phase motors?
A- Maintain constant speed B -Break the starting winding C- Break the running winding D- Protect the motor from over loading

12 Which is the application of universal motor?
A -Jet pump B- Food mixer C- Tele printer D- Compressor

13-Which single phase motor is fitted with wound rotor?
A- Repulsion motor B -Shaded pole motor C- Permanent capacitor motor D -Capacitor start capacitor run motor

14 What is the relation between running winding and starting winding of a single phase induction motor with respect to resistance?
A -Both resistances will be equal B- Running winding is less, starting winding more C- Running winding is more, starting winding less D- Running winding is less, starting winding infinity

15 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

16 How the direction of rotation of a capacitor start induction run motor is reversed?
A- By changing the supply terminals B- By changing the capacitor connections
C- By interchanging main winding terminals D- By interchanging both main and auxiliary winding terminals

17 Which single phase motor tapped field speed control method is employed?
A- Universal motor B- Shaded pole motor C -Capacitor start induction run motor
D- Capacitor start capacitor run motor

18 Which type of single phase induction motor is used in food mixer?
A -Universal motor B- Repulsion motor C -Shaded pole motor D- Permanent capacitor motor

19 What is the angular displacement between starting and running winding of a single phase induction motor?

A- 45 electrical degree B- 60 electrical degree C- 90 electrical degree D- 120 electrical degree

20Why the hysteresis motor is suitable for sound recording instruments?
A- Small in size B- High efficiency C- Noiseless operation D- Less error operation

21 Which motor is preferred for domestic water pumps?
A -Universal Motor B -Repulsion motor C- Shaded pole motor D- Capacitor start motor

22 Which type of motor has relatively small starting torque?
A- Universal motor B- Capacitor start capacitor run motor C- Capacitor start induction run motor
D- Resistance start induction run motor

23 What is the function of centrifugal switch in split phase motor?
A -Protects from over current B- Maintains constant speed C- Protect the motor from over loading D- Make and break the starting winding from supply

24 How to produce starting torque in a shaded pole fan motor?
A- Using rings on poles B- Using capacitor on winding circuits C- Interchanging cage rotor windings by switch D- Interchanging the field coil windings by switch

25 What is the reason to use a permanent capacitor in fan motor circuit?
A- Speed regulation B- Lower power consumption C- Splitting of phase for torque
D- Controlling electrical interference

26 Which motor is having half coil winding?
A -Mixer B -Grinder C- Ceiling fan D- Washing machine

27 Why running winding is placed in the bottom of the core?

A- To get low resistance B- To get low inductance C- To get high resistance
D- To get high inductance

28 Calculate the slot distance for a ceiling fan having 28 slots, 14 poles, 14 coils in half coil connection?
A- 90° B- 120° C- 180° D- 240°

29 What is the application of shaded pole motor?
A- Hair dryer B -Ceiling fan C -Wet grinder D- Washing machine

30 Which type of single phase motor is used for hard disk drives?
A- Stepper motor B- Repulsion motor C- Hysteresis motor D -Reluctance motor

31 What is the function of centrifugal switch used in capacitor start, capacitor run induction motor?
A- Disconnect the running winding after reached 75% to 80% speed B -Disconnect the starting winding after reached 75% to 80% speed C- Disconnect the starting capacitor after reached 75% to 80% speed D- Disconnect the starting and running winding after reached 75% to 80% speed

32 Which type of single phase motor is having very high starting torque than any other type of single phase motor?
A- Universal motor B- Reluctance motor C- Repulsion start induction run motor
D- Capacitor start induction run motor

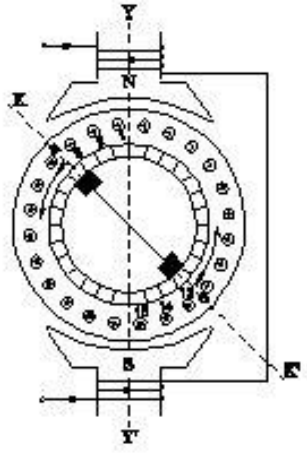
33 Where the capacitor is connected in a single phase permanent capacitor motor?
A -In series with starting winding B -In series with running winding C- In parallel with starting winding D- In parallel with running winding

34 Which motor is used in table fan?
A- Universal motor B -Shaded pole motor C- Eddy current motor D- Permanent capacitor motor

35 What is the effect, if coil group connection is wrongly connected in a single phase motor rewinding?

A- Motor runs slowly B- Motor will not run C - Motor runs in very high speed D - Motor runs and takes more current at no load

36 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

37 What is the effect if the centrifugal switch is not disconnected after the motor starts?
A- Motor will run normally B- Motor will stop immediately C- Starting winding will burn out D- Motor will run very slow speed

38 How the direction of rotation of repulsion motors is to be reversed?
A- By shifting the brush-axis B- By interchanging the supply terminals C- By changing the main winding terminals D- By changing the compensating winding terminals

39 Why a capacitor is connected across centrifugal switch in the centrifugal switch speed control method?
A- To maintain constant speed B- To protect from over loading C -To improve the power factor D- To reduce the sparks in contacts

40 What is the effect, if some slots in a split phase motor left out without winding after completion of concentric winding?
A- Works normally B- Reduction in speed C- Reduction in torque D- Runs with very high speed

41 How the radio interference can be suppressed in centrifugal switch method of speed control of universal motor?

A- By connecting capacitor across centrifugal switch B- By connecting capacitor in series with centrifugal switch C- By adding compensating winding with armature D- By connecting an inductor in series with centrifugal switch ?

42 In a stepper motor the angular displacement ?

(A) can be precisely controlled. (B) it cannot be readily interfaced with micro computer based controller. (C) the angular displacement cannot be precisely controlled. (D) it cannot be used for positioning of work tables and tools in NC machines.

43 A hysteresis motor ?

(A) is not a self-starting motor.(B) is a constant speed motor.(C) needs dc excitation. (D) can not be run in reverse speed

44 A ceiling fan uses A split-phase motor. ?
(B) capacitor start and capacitor run motor.(C) universal motor.(D) capacitor start motor
.
45 A stepper motor is ?
(A) a dc motor. (B) a single-phase ac motor.(C) a multi-phase motor. (D) a two phase motor.

46 The drive motor used in a mixer-grinder is a ?
(A) dc motor. (B) induction motor.(C) synchronous motor. (D) universal motor
.
47 In a capacitor start single-phase induction motor, the capacitor is connected ?
(A) in series with main winding.(B) in series with auxiliary winding.(C) in series with both the windings.(D) in parallel with auxiliary winding
.
48 In case of a universal motor, torque pulsation is minimized ?

(A) load inertia(B) rotor(C) both rotor and load (D) load

49 The torque-speed characteristics of an a.c. operated universal motor has a characteristic and it be started under no-load condition. ?
(A) inverse, can (B) nearly inverse, can
(C) inverse, cannot (D) nearly inverse, cannot

50 The eddy current loss in an a-c electric motor is 100 watts at 50 Hz. Its loss at 100 Hz will be ?
(A) 25 watts (B) 59 watts (C) 100 watts (D) 400 watts
(Eddy current losses a f2
New loss a (2f)2
New loss a 4f2
∴ 4 times)
51 If the voltage is reduced to half, the torque developed by an induction motor will be reduced to ?
(A) 1/4 of original torque (B) 1/2 of original torque (C)1/8 of original torque (D) 1/16 of original torque

52 The direction of rotation of hysteresis motor is reversed by ?
(A) Shift shaded pole with respect to main pole(B) Reversing supply lead(C) Either A or B(D) Neither A nor B

53 A 1.8°step, 4-phase stepper motor has a total of 40 teeth on 8 pole of stator. The number of rotor teeth for their rotor will be ?
(A) 40(C) 100(B) 50(D) 80

54 A single phase Hysteresis motor
(A) can run at synchronous speed only(B) can run at sub synchronous speed only(C) can run at synchronous and super synchronous speed(D) can run at synchronous and sub synchronous speed ?

55 A 3 stack stepper motor with 12 numbers of rotor teeth has a step angle of ?
.(A) 12° (B) 8° (C) 24° (D) 10°

56 In a split phase motor, the running winding should have 9 coil ?

(A)High resistance and low inductance(B)High resistance and High inductance(C)Low resistance and high inductance(D)Low resistance and Low inductance

57. If the capacitor of a single-phase motor is short-circuited ?

(A)The motor will not star(B)The motor will run in the same direction at reduced speed(C)The motor will run in reverse direction(D)None of the above

58- In a split phase motor ?
(A)Both starting and running windings are connected through a centrifugal switch(B)Centrifugal switch is used to control supply voltage(C)The running winding is connected through a centrifugal switch(D)The starting winding is connected through a centrifugal switch

59. The torque developed by a single-phase motor at starting is ?

(A) less than the rated torque(B)More than the rated torque(C)zero(D)None of the above

60. In a capacitor start and run motors the function of the running capacitor in series with the auxiliary winding is to ?

(A)Improve power factor(B)Reduce fluctuations in torque(C)Increase overload capacity(D)To improve torque

61. Which of the following motor will have relatively higher power factor?

(A)Capacitor start motor(B)Shaded pole motor(C)Capacitor run motor

D)Split phase motor

62. A centrifugal switch is used to disconnect 'starting winding when motor has ?

(A)Picked up 10% speed(B)Picked up 20% speed(C)Picked up 5 – 10% speed(D)Picked up 50 – 70% speed

63. direction of rotation of repulsion motor depend up on ?

(A)Same as that of brush shift(B)Independent of brush shift(C)Opposite to that of brush shift(D)None of the above

64. If a particular application needs high-speed and high starting torque, then which of the following motor will be preferred?

(A) Shaded pole motor(B)Capacitor start motor(C)Capacitor run motor(D)Universal Motor

65. Which of the following motor is used in the mixer?

(A) Repulsion Motor(B)Reluctance Motor(C)Hysteresis Motor(D)Universal Motor

66. The direction of rotation of an hysteresis motor is determined by ?

(A) Retentivity of the rotor material(B) Position of shaded Pole with respect to the main pole(C) Interchanging the supply leads(D) None of the above ?

67. Direction of rotation of a split phase motor can be reversed by reversing the connection of ?

(A) Starting winding(B) Running winding(C) Either 1 or 2(D) None of the above

68. In a capacitor start single-phase motor when capacitor is replaced by a resistance ?

(A) Motor will consume less power(B) Motor will continue to run in the same direction(C) Motor will stop(D) None of the above

69. A capacitor start single phase induction motor when capacitor is replaced by inductance ?

(A) Motor will not start(B) Start and run(C) Small hp motor can start but large hp motor will not start(D) None of the above

70. A hysteresis motor works on the principle of ?

(A) Eddy current loss (B) Magnetization of rotor(C) Hysteresis loss(D) Electromagnetic induction

71. Which of the following single-phase motors is suitable for timing and control purposes ?

(A) Universal Motor (B) Reluctance Motor(C) Series Motor(D) Split phase motor

72. In A.C. series motor compensating winding is employed to ?

(A) Increase the torque (B) Reduce the effect of armature reaction(C) Reduce sparking in brushes (D) Both 2 and 3

73. The repulsion-start induction-run motor is used because of ?

(A) Good Power factor(B) High efficiency(C) High starting torque(D) Low cost

74. The speed of a universal motor is generally reduced by using ?

(A) Gear train (B) V- belt(C) Brakes(D) Chains

75. Which of the following motors can be used for unity power factor?

(A) Hysteresis motor(B) Capacitor motor(C) Schrage motor(D) Split phase motor

76. In split-phase motor, auxiliary winding is made up of ?

(A) Thick wire placed at top of the slot (B) Thin wire placed at the bottom of the slot(C) Thick wire placed at bottom of the slot(D)Thin wire placed at top of the slot

77. In a two value capacitor motor, the capacitor used for running purposes is ?

(A) Paper spaced oil filled type(B) Air capacitor(C) Ceramic type(D) None of the above

78. In shaded pole motor, the direction of rotation of motor is

(A) From shaded pole to the main pole(B) From the main pole to shaded pole(C) Either 1 or 2

(D) None of the above

79. The direction of rotation of universal motor can be reversed the by reversing the flow of current through ?

(A) Field winding(B) Armature winding(C) Either 1 or 2(D) None of the above

80. Which motor is normally free from mechanical and magnetic vibrations?

(A) Capacitance motor(B) Hysteresis Motor(C) Reluctance Motor(D) Split phase motor

81. In a hysteresis motor, the rotor must have ?

(A) High resistivity(B) High retentivity(C) High susceptibility(D) None of the above

82. The rotor of a hysteresis motor is made of ?

(A) Copper(B) Cast iron(C) Aluminium(D) Chrome steel

83. In split phase motor, the main winding is made up of ?

(A) Thick wire placed at the top of the slots(B) Thick wire placed at the bottom of the slots(C) Thin wire placed at the top of the slots(D) Thin wire placed at the bottom of the slots

84. In repulsion motor, maximum torque is developed when ?

(A) Brush axis coincides with the field axis(B) Brush axis is at 90° electrical to the field axis(C) Brush axis is at 45° electrical to the field axis(D) None of the above

85. If the centrifugal switch does not open at 70 to 80 percent of synchronous speed of motor, it can ?

(A) Damage to the starting winding(B) Overloading of running winding(C) Damage to the centrifugal switch(D) None of the above

86. Speed torque characteristic of a repulsion induction motor is similar to that of a D.C ?

(A) Series Motor(B) Compound Motor(C) Shunt Motor(D) None of the above

87. In a ceiling fan employing capacitor run motor ?

(A) Primary winding surrounds the secondary winding(B) Secondary winding surrounds the primary winding(C) Either 1 or 2(D) None of the above

88. The rotor slots, in an induction motor, are usually not quite parallel to the shaft because ?

(A) Improve power factor(B) Improve efficiency(C) Reducing the tendency of the rotor teeth to remain under the stator teeth(D) None of the above

89. The motor used for the compressors is ?

(A) Reluctance motor(B) Shaded pole motor(C) DC series motor(D) Capacitor start-capacitor run motor

90. Starting winding of a single phase motor of a refrigerator is disconnected from the circuit by means of ?

(A) Magnetic Relay(B) Centrifugal switch(C) Thermal Relay(D) None of the above

91. If a single phase induction motor runs slower than normal, the most likely defect is ?

(A) Short circuit winding(B) Open circuit winding(C) Worn bearing(D) All of the above

92. In a universal motor, the most common cause of brush sparking is ?

(A) Open armature winding(B) Shorted armature winding(C) High commutator mica(D) All of the above

93. If starting winding of a single-phase induction motor is left in the circuit, it will ?

(A) Damage the starting winding(B) Run Faster(C) Run slower(D) Spark at light load

94. Most of the fractional horsepower motors have either ?

(A) Ball bearing(B) Porous bearing(C) Plain or sleeve bearing(D) Any of the above

95. Which of the following statements regarding reluctance-start motor is incorrect?

(A) It is similar to reluctance motor(B) Its working principle is similar to shaded pole motor(C) The air-gap between the rotor and salient poles is non-uniform(D) It is an induction motor and not a synchronous one

96. Which of the following motors have two separate windings on the motor?

(A) Repulsion start induction run motor(B) Repulsion motor(C) Repulsion induction motor(D) Capacitor start motor

97. A shaded pole motor does not possess ?

(A) Commutator(B) Centrifugal switch(C) Capacitor(D) All of the above

98. Locked rotor current of a shaded pole motor is ?

(A) Less than full load current(B) Equal to full load current(C) Slightly more than full load current(D) None of the above

99. If a D.C. series motor is operated on A.C. supply, it will have ?

(A) Poor power factor(B) Poor efficiency(C) Spark excessively(D) All of the above

100. The capacitors used in single-phase capacitor motors have no ?

(A) Polarity Marking(B) Voltage Rating(C) Dielectric medium(D) None of the above

101. In case of a reluctance motor, when the load is increased so that it cannot maintain synchronous speed the motor will ?

(A) Become unstable(B) Run as induction motor(C) Burn out(D) None of the above

102. Which of the following motors are preferred for tape-recorders?

(A) Capacitor start motor(B) Capacitor run motor(C) Hysteresis motor(D) None of the above

103. In a shaded pole single-phase motor, the revolving field is produced by the use of ?

(A) Shading coil (B) Capacitor(C) Inductor(D) All of the above

104. The power factor of a single-phase induction motor is usually ?

(A) Always Lagging(B) Always Leading(C) Unity(D) None of the above

105. When a D.C. series motor is connected to A.C. supply, the power factor will be low because of ?

(A) The fine copper wire winding(B) The induced current in rotor due to variations of flux(C) High inductance of field and armature circuits(D) None of the above

106. The speed/load characteristics of a universal motor is same as that of V

(A) D.C. series motor(B) D.C. shunt motor(C) A.C. motor(D) None of the above

ANSWERS

AC Single Phase Motor

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

ALTERNATOR

1. Which formula is used to calculate EMF/phase in a ideal alternator?

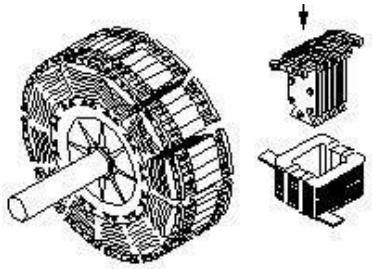
A) E=ϕFT/2.22 B) E = ϕFT/4.44 C) E = 2.22 ϕFT D) E=4.44 ϕFT

2. Which rule is used to find the direction of induced emf in an alternator?

A) Cork screw rule B) Right hand palm rule

C) Fleming's left hand rule D) Fleming's right hand rule

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



A) Stator e rotor D) Smooth cylindrical rotor

4. What is the formula to calculate emf equation of an alternator?

A) E = 4.44 KdKcTϕm B) E = 2.22 KdKcFϕm

C) E = 4.44 KdKcFTϕm D) E = 1.11 KdKcFϕm

5. How alternators are rated?

A) KVA B) KW C) MW D) KV

6. What is the supply frequency ofan alternator having 6 poles runs at 1000 rpm?

A) 25Hz B) 40Hz C) 50Hz D) 60Hz

7. Calculate the speed of an alternator having 2 poles at a frequencyof50Hz?

A) 500rpm B) 2500rpm C) 3000rpm D) 6000rpm

8. What condition the lamps become dark in dark lamp method of parallel operation of two alternators?

A) Terminal voltages are equal B) Voltage and frequency are equal

C) Voltage and power rating are equal D) Frequency are same in both alternator

9. How to compensate de-magnetizing effect due to armature reaction in an alternator

A) Reducing the speed of alternator B) Reducing field excitation current

C) Increasing field excitation current D) Increasing the speed of alternator

10. What is the use of synchro scope?

A) Adjust the output voltage B) Adjust the phase sequence

C) Adjust the supply frequency D) indicate the correct instant for paralleling

11. What is the name of the equipment that provides D.C to the rotor of alternator?

A) Exciter B) Inverter C) Converter D) Synchronizer

12. What is the purpose of damper winding in alternator?

A) Reduces the copper loss B) Reduces windage losses

C) Reduces the hunting effect D) Improves the voltage regulation

13. Which condition is to be satisfied before parallel operation of alternators?

A) Rating must be same B) Phase sequence must be same

C) Rotor impedance must be same D) Stator impedance must be same

14. What is the speed of an alternator connected with a supply frequency of 50 Hz at rated voltage having 4 poles?

A) 1000rpm B) 1500rpm C) 3000rpm D) 4500rpm

15. What condition the two lamps become bright and one lamp dark during paralleling of two alternators?

A) Terminal voltages are equal

B) Voltages and frequencies are equal

C) Voltages and phase sequence are equal

D) Both the alternators receive same frequency

16. What causes the terminal voltage of an alternator reduces, if the load increases?

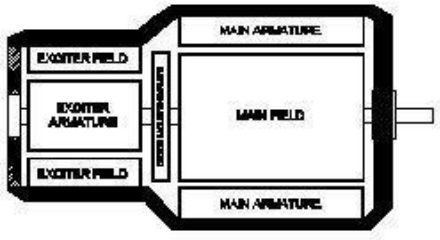
A) Field resistance B) Armature reaction C) Inductive reactance D) Armature resistance

17. What is the purpose of using damper winding in AC generator?

A) Prevents heating B) Reduces copper loss

C) Reduces windage loss D) Prevents the hunting effect

18. What is the type of alternator?



A) Brush less alternator B) Three phase alternator

C) Single phase alternator D) Salient pole type alternator

19. Calculate the speed in r.p.s of the 2 pole, 50Hz alternator?

A) 50 rps B)100 rps C)1500 rps D)3000 rps

20. What is the advantage of using rotating field type alternator?

A) Easy to locate the faults in the field

B) Easy to connect the load with alternator

C) Easy to dissipate the heat during running

D) Two slip rings only required irrespective of No. of phases

21. What is the effect in increasing the field excitation current in alternator?

A) Prevents demagnetizing B) Over voltage protection

C) Dead short circuit protection D) Alternator will be over loaded

22. Calculate the pitch factor (KP) for a winding having 36 stator slots 4 pole with angle (α) is 30° in alternator?

A) 0.942 B) 0.965 C) 0.978 D) 0.985

23. What is the cause for hunting effect in alternators?

A) Due to over load B) Running without load

C) Running with fluctuation of speed D) Due to continuous fluctuation in load

24. Calculate the voltage regulation in percentage if the load is removed from an alternator, the voltage rises from 480V to 660V?

A) 0.272 B) 0.325 C) 0.375 D) 0.385

25. As the speed of an alternator increases, the frequency

A) Increases B) Decreases

C) Remains constant D) May increases or decreases depending on the power factor

26.The generator which gives dc supply to the rotor of an alternator is called

A) Convertor B) Exciter C) Inverter D) Rectifier

27.The number of electrical degrees passed through in one revolution of a four pole synchronous alternator is

A) 360° B) 720° C) 1440° D) 2880°

28. The rotor of alternator has

A) No slip rings B) Two slip rings C) Three slip rings D) Four slip rings

29 .Alternator works on the principle of

A) Self and mutual induction B) Self-mutual induction

C) Faraday's law of electromagnetic induction D) Mutual induction

30. In an alternator, when the load increases due to armature reaction, the terminal voltage

A) Rises B) Drops C) Remains unchanged D) May drop or rise

31. In a rotating electrical machine, the chording angle for eliminating fifth harmonic should be

A) 38° B) 36° C) 33° D) 30°

32. The exciting field coil of an alternator is generally excited by

A) A separate dc generator driver by some source

B)A separate ac generator drive by some source

C) A dc generator coupled directly to the armature shaft

D) A battery

33. The material used for the manufacture of large turbo-alternator is

A) Cold rolled grain oriented steel B) Hot rolled grain oriented steel

C) Wrought iron D) Cast steel

34. The ratio of armature leakage reactance to synchronous reactance of large size modern alternator is about

A) 0.05 B) 0.2 C) 0.4 D) 0.6

35. In synchronous generator, the purpose of using damper winding is to

A) Reduce the hunting effect B) Reduce the armature reaction effect

C) Provide starting torque D) All of the above

36. In alternators fractional pitch coil are used to reduce the effect of

A)Hunting B) Harmonics C)Armature reaction D)Power factor

37. If the driving force of two alternators operating in parallel is changed, this result change in

A) Generated voltage B) Frequency C)Back emf D)Reactive power

38. If the excitation of two alternators operating in parallel is changed, this result change in

A) Generated voltage B) Frequency C)Back emf D) Reactive power

39.Two alternator operating in parallel must have same

A) Voltage B) Frequency C) phase sequence D) all of the above.

40. The power factor of an alternator is controlled by its

A) Speed B) Load C) Excitation D) Prime mover.

41. The power factor of an alternator depends on

A) Load B) Speed of rotor C) Core losses D) Armature losses.

42. Which kind of rotor is most suitable for turbo alternators which are designed to run at high speed?

A) Salient pole type B) Non-salient pole type

C) Both A and B above D) None of the above.

43. Salient poles are generally used on

A) High speed prime movers only B)Medium speed prime movers only

C) Low speed prime movers only D) Low and medium speed prime movers.

44. The frequency of voltage generated in an alternator depends on

A) Number of poles B) Rotative speed

C) Number of poles and rotative speed D) Number of poles, rotative speed and type of winding

45. The advantage of salient poles in an alternator is

A) Reduced windage loss B) Reduced bearing loads and noise

C) Reduced noise D) Adaptability of low and medium speed operation

46. Two alternators are to be put in parallel. Which of the following factors should be identical for both?

A) Frequency B) Phase sequence C) Voltage D) All of the above

47. If two alternators are running in proper synchronism and the voltage of one machine is suddenly increased

A) Both machines will stop

B) One machines will stop

C) Synchronizing torque will be produced to restore further synchronism

D) None of the above

48. Three-phase alternators are invariably star-connected because

A) Higher terminal voltage is obtained B) Less turns of wire are required

C) Small conductors can be used D) Magnetic losses are the minimum

49. In an alternator, pitch factor is the ratio of the e.m.fs. of

A) Full pitch winding to short pitch winding B) Short pitch coil to full pitch coil

C) Distribute winding to full pitch winding D) Full pitch winding to concentrated winding

50. At leading power factor, the armature flux in an alternator

A) Distorts the rotor flux B) Aids the rotor flux

C) Opposes the rotor flux D) Does not affect the rotor flux

51. A lower voltage alternator, for the same power rating, will be

A) More costly B) Larger in size

C) More efficient D) Operating at high r.p.m.

52. An alternator operating at lower voltage, for the same power rating, will be

A) More-efficient B) Costlier C) Less noisy D) Larger in size

53. Which of the following coils in an alternator will have e.m.f. closer to sine waveform?

A) Distributed winding in full pitch coils B) Distributed winding in short pitch coils C) Concentrated winding in full pitch coil
D) Concentrated winding in short pitch coils

54. The distribution factor, in alternators, is defined as the ratio of e.m.fs. of

A) Distributed winding to full pitch winding

B) Concentrated winding to distributed winding

C) Distributed winding to concentrated winding

D) Full pitch winding to distributed winding

55. Two alternators are running in parallel. If the field of one of the alternators is adjusted it will

A) Change its power factor B) Change its frequency

C) Reduce its speed D) Change its load

56. For parallel operation of the two alternators, desirable feature is that both should have

A) Same reactance B) Same resistance

C) More of resistance as compared to synchronous reactance

D) Less of resistance as compared to synchronous reactance

57. An alternator is said to be over excited when it is operating at

A) Lagging power factor B) Leading power factor

C) Unity power factor D) Lagging to leading power factor

58.An alternator driven by a Francis hydraulic turbine is a .....alternator

A) Low speed B) Medium speed

C) High speed D) Low or medium speed

59. The slip rings employed in a 3-phase alternator in hydro station are insulated for

A) Low voltage B) Very low voltage

C) Full armature voltage D) Extra high tension voltage

60. Non-salient pole type of rotor construction is usually provided in the alternators used in

A) Hydropower stations B) Thermal power stations

C) Either of the above D)None of the above

61. Alternator of a central power station will have

A) Revolving field winding B) Revolving armature winding

C) Either of the above D) None of the above

62. In an alternator, the stator frame serves

A) To verticate the armature B) To hold the armature stampings

C) To protect the whole machine D) As a return path for the flux

63. In an alternator short pitch coils are used

A) To reduce the stray losses

B) To reduce the size of the machine

C) To provide accurate phase difference of 120^0 between

D) To reduce the harmonics in generated e.m.f.

64. If an alternator is operating at leading power factor, then it can be concluded that

A) The alternator is under-excited

B)The alternator is over-excited

C) The torque angle of the alternator has negative value

D) The residual magnetism of the poles is zero

65. The frequency of voltage generated in large alternators is

A) 50 Hz B) 60 Hz C) In kilo cycles M D) In mega cycles

66. In an alternator the voltage generated per phase is proportional to

A) Number of turns in coil B) Flux per pole C) Frequency of waveform D)All of the above

67. Alternators are usually designed to generate

A) Definite currents B) Definite power factor

C) Variable frequencies D) Definite frequencies

68. When the speed of an alternator increases

A) The frequency decrease B) The frequency increases

C) The frequency remains same D)The frequency changes

69. In alternators the standard practice, now a days is to have

A) Rotating field B) Rotating armature

C) Either of the above D) None of the above

70. In huge alternators, the moving part is

A) Brushes B) Poles C) Armature D) None of the above

71. Of the following conditions, the one which does not have to be met by alternators working in parallel is

A) terminal voltage of each machine must be the same

B) the machines must have the same phase rotation

C) the machines must operate at the same frequency

D) the machines must have equal ratings.

72. After wiring up two 3-φ alternators, you checked their frequency and voltage and found them to be equal. Before connecting them in parallel, you would

A) check turbine speed B) check phase rotation C) lubricate everything D) check steam pressure.

73. Zero power factor method of an alternator is used to find its

A) efficiency B) voltage regulation C) armature resistance D) synchronous impedance.

74. It is never advisable to connect a stationary alternator to live bus-bars because it

A) is likely to run as synchronous motor B) will get short-circuited

C) will decrease bus-bar voltage though momentarily

D) will disturb generated e.m.f. of other alternators connected in parallel

75. The frequency of voltage generated by an alternator having 4-poles and rotating at 1800 r.p.m.is .....hertz.

A)60 B) 7200 C) 120 D) 450.

76. A 50-Hz alternator will run at the greatest possible speed if it is wound for ..... poles.

A)8 B)6 C)4 D)2

77. Three-phase alternators are invariably Y-connected because

A) magnetic losses are minimized B) less turns of wire are required

C) smaller conductors can be used D) higher terminal voltage is obtained.

78. The winding of a 4-pole alternator having 36 slots and a coil span of 1 to 8 is short-pitched by ..... degrees.

A) 140 B)80 C)20 D) 40

79. Which kind of rotor is most suitable for turbo alternators which are designed to run at high speed ?

A) Salient pole type B) Non-salient pole type

C) Both A and B above D) None of the above

80. Salient poles are generally used on

A) High speed prime movers only B) Medium speed prime movers only

C) Low speed prime movers only D) Low and medium speed prime movers.

81. The frequency of voltage generated in an alternator depends on

A) Number of poles B) Rotative speed

C) Number of poles and rotative speed D) Number of poles, rotative speed and type of winding

82. The frequency of voltage generated by an alternator having 8 poles and rotating at 250 rpm is A) 60 Hz B) 50 Hz C) 25 Hz D) 16 2/3 Hz.

83. An alternator is generating power at 210 V per phase while running at 1500 rpm. If the need of the alternator drops to 1000 rpm, the generated voltage per phase will be

A) 180 V B) 150 V C) 140 V D) 105 V

84. A 10 pole AC generator rotates at 1200 rpm. The frequency of AC voltage in cycles per second will be

A) 120 B) 110 C) 100 D) 50

85. The number of electrical degrees passed through in one revolution of a six pole synchronous alternator is

A) 360 B)720 C) 1080 D) 2160

86. Fleming's left hand rule may be applied to an electric generator to find out

A) Direction of rotor rotation B) Polarity of induced emf

C) Direction of induced emf D) Direction of magnetic field.

87. If the input to the prime mover of an alternator is kept constant but the excitation is changed, then the

A) Reactive component of the output is changed

B) Active component of the output is changed

C) Power factor of the load remains constant

D) Power factor of the load reduces.

88. An alternator is said to be over excited when it is operating at

A) Unity power factor B) Leading power factor

C) Lagging power factor D) Lagging to leading power factor.

89. When an alternator is running on no load the power supplied by the prime mover is mainly consumed

A) To meet iron losses B) To meet copper losses

C) To meet all no load losses D) To produce induced emf in armature winding.

90. A three phase alternator has a phase sequence of RYB for its three output voltages. In case the field current is reversed, the phase sequence will become

A) RBY B) RYB C) YRB D) None of the above.

91. A machine without Commutator, providing an ac emf to the external circuit is called as

A) D.C. generator B) Alternator C) Synchronous motor D) Transformer

92. Practically, most of the alternators prefer which type of construction?

A) Rotating field type B) Rotating armature type

C) Both are equally important D) None of these

93. In synchronous machine, poles are made up of thick steel laminations. In salient pole type rotor

A) Poles are projected out from the surface of the rotor

B) The unslotted portions of the cylinder

C) itself acts as the poles

D) Both A and B

94.The nominal speed of 50 Hz, 3-phase turbo-alternator in rpm is

A)600 B)1200 C)1800 D)3000

95. To reverse the phase sequence of voltage generated in an alternator, we should

A) reverse the connection of its field winding

B) interchange any two of its phase terminals

C) both (a) and (b) above

D) none of the above

96. Synchronous generator is also known as:

A) Dc generator B) Alternator C) Decoupler D) Magnetostat

97. Rotor winding of alternator is also known as:

A) Field winding B) Armature winding

C) Protruding winding D) Non salient winding

98. The type of alternator used in hydropower stations:

A) Turbo B) Salient pole C) Non-salient D) Any of the above

99. Why parallel operation of alternators is necessary?

A) To get more voltage B) To share more loads

C) To Improve efficiency D) To maintain constant frequency

100. Which condition is to be satisfied before connecting Two alternators in parallel?

A) Running alternator voltage must be less

B) Running alternator voltage must be more

C) Voltage must be same in two alternators

D) Incoming alternator voltage must be more

101. Which must be same in parallel operation of two alternators?

A) Inductance of field coils B) Resistance of field coils

C) Exciter current of two alternators D) Phase sequence of two alternators

102. Why the terminal voltage of an alternator is reduced if it is loaded

A) Due to armature reaction B) Due to exciter output voltage drop

C) Due to voltage drop in the brushes D) Due to voltage drop in the field winding

103. What is the value of power factor, if the cross magnetizing effect occurs in alternator due to armature reaction?

A) At zero P.F B) At zero lagging

C) At unity P.F D) At Zero leading

104. How to compensate the de- magnetizing effect in the alternator due to armature reaction at zero lagging power factor?

A) Increase the armature current B) Decrease the armature current

C) Increase the field excitation current D) Decrease the field excitation current

105. What is the effect in the alternator due to armature reaction at zero leading power factor?

A) Distraction of flux B) Magnetizing effect

C) Cross - magnetizing effect D) De - magnetizing effect

Answer Key

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

SYNCHRONOUS MOTOR

1. What is the purpose of damper winding in a synchronous motor at starting?

A) Produce high voltage to initiate the rotation

B) Produce high current to start rotate the motor

C) Produces torque and runs near in synchronous speed

D) Produce a high magnetic-field to maintain a constant speed

2. Why the synchronous motor fails to run at synchronous speed?

A) Insufficient excitation B) Defective pony motor

C) Open in damper winding D) Short in damper winding

3. How the synchronous motor is used as a synchronous condenser?

A) Varying the motor load B) Varying the rotor excitation

C) Varying stator voltage in motor D) Varying stator current in motor

4. What is the function of damper windings in synchronous motor?

A) Maintain power factor B) Excite the field winding

C) Maintain constant speed D) Start the synchronous motor

5. How synchronous motor works as a power factor corrector?

A) Varying the line voltage B) Varying the field excitation

C) Increasing the speed of motor D) Decreasing the speed of motor

6. Synchronous motor for power factor correction operates at

A) No load with over-excited fields B) No load with under-excited fields

C) Normal load with minimum excitation D) Normal load with zero excitation

7. What happens if field winding of the synchronous motor is short circuited?

A) First, starts as induction motor then run as synchronous motor

B) Not start

C) Motor will burn out

D) Run as induction motor

8. An unexcited single phase synchronous motor is

A) Reluctance motor B) Repulsion motor C) Universal motor D) AC series motor.

9. In case the field of a synchronous motor is under excited, the power factor will be

A) Leading B) Lagging C) Zero D) Unity.

10. The damping winding in a synchronous motor is generally used

A) To provide starting torque only (B) To reduce noise level
(C) To reduce eddy currents (D) To prevent hunting and provide the starting torque.

11. The back emf set up in the stator of a synchronous motor will depend on

(A) Rotor speed only (B) Rotor excitation only

(C) Rotor excitation and rotor speed (D) Coupling angle, rotor speed and excitation.

12. Which of the following is an unexcited single phase synchronous motor ?

A) A.C. series motor B) Universal motor

C) Reluctance motor D) Repulsion motor.

13.An over excited synchronous motor draws current at

A) Lagging power factor B) Leading power factor

C) Unity power factor D) Depends on the nature of load.

14. If the field of a synchronous motor is under excited, the power factor will be

A) Lagging B) Leading C) Unity. D) None of the above

15. The maximum value of torque that a synchronous motor, can develop without losing its synchronism, is
known as

A) Breaking torque B) Synchronizing torque C) Pull out torque D) Slip torque.

16. The purpose of embedding the damper winding in the pole face is to

A) Eliminate hunting and provide adequate starting torque B) Reduce windage losses

C) Eliminate losses on account of air friction D) Reduce bearing friction.

17. Which of the following motors is non-self-starling?

A) Squirrel cage induction motor B) Wound rotor induction motor

C) Synchronous motor D) DC series motor.

18. Which motor can conveniently operate on lagging as well as leading power factor?

A) Squirrel cage induction motor B) Wound rotor induction motor

C) Synchronous motor D) Any of the above

19.A synchronous motor working on leading power factor and not driving any mechanical, is known

A) Synchronous induction motor B) Spinning motor

C) Synchronous condenser D) None of the above.

20.In a synchronous motor, the torque angle is

A) The angle between the rotating stator flux and rotor poles

B) The angle between magnetizing current and back emf

C) The angle between the supply voltage and the back emf

D) None of the above.

21. The hunting in a synchronous motor takes place when

A) Friction in bearings is more B) Air gap is less C) Load is variable D) Load is constant.

22. V curves for a synchronous motor represent relation between

A) Field current and speed B) Field current and power factor

C) Power factor and speed D) Armature current and field current.

23. In which coil the emf generated will be more, for given flux distribution and number of turns

A) Full pitch coil B) Short pitch coil

C) Long pitch coil D) Equal emf will be generated in all cases.

24. In a synchronous motor which loss does not vary with load ?

A) Copper losses B) Hysteresis losses

C) Windage losses D) None of the above.

25. The synchronous motors are not self-starting because

A) Stator is not used

B) Starting winding is not provided

C) The direction of instantaneous torque on the rotor reverses after half cycle

D) There is no slip.

26. The armature current of the synchronous motor has large values for

A) Low excitation only B) High excitation only

C) Both low and high excitation. D) None of the above.

27. A pony motor is basically a

A) Small induction motor B) D.C. series motor

C) D.C. shunt motor D) Double winding A.C./D.C. motor

28. A synchronous motor can develop synchronous torque

A) When under loaded B) While over-excited

C) Only at synchronous speed D) Below or above synchronous speed

29. A synchronous motor can be started by

A) Pony motor B) D.C. compound motor

C) Providing damper winding D) Any of the above

30. A three-phase synchronous motor will have

A) No slip-rings B) One slip-ring C) Two slip-rings D) Three slip-rings

31. Under which of the following conditions hunting of synchronous motor is likely to occur ?

A) Periodic variation of load B) Over-excitation

C) Over-loading for long periods D) Small and constant load

32. When the excitation of an unloaded salient pole synchronous motor suddenly gets disconnected

A) The motor stops

B) It runs as a reluctance motor at the same speed

C) It runs as a reluctance motor at a lower speed

D) None of the above

33. The power developed by a synchronous motor will be maximum when the load angle is

A) Zero B) 45° C) 90° D) 120°

34. A synchronous motor can be used as a synchronous capacitor when it is

A) under-loaded B) Over-loaded C) under-excited D) Over-excited

35. Mostly, synchronous motors are of

A) Alternator type machines B) Induction type machines

C) Salient pole type machines D) Smooth cylindrical type machines

36. Synchronous motor always runs at

A) The synchronous speed B) Less than synchronous speed

C) More than synchronous speed D) None of the above

37. The working of a synchronous motor is similar to

A) Gear train arrangement B) Transmission of mechanical power by shaft

C) Distribution transformer D) Turbine

38. The back e.m.f. of a synchronous motor depends on

A) Speed B) Load C) Load angle D) all of the above

39.In a synchronous motor which loss varies with load ?

A) Windage loss B) Bearing friction loss C) Copper loss D) Core loss

40.The percentage slip in case of a synchronous motor is

A) 1% B) 100% C) 0.5% D) Zero

41.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

42. 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

43.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

44.A synchronous motor working at leading power factor can be used as

A) Voltage booster B) Phase advancer C) Noise generator D) Mechanical synchronizer

45.An over excited synchronous motor is used for

A) Fluctuating loads B) Variable speed loads C) Low torque loads D) Power factor corrections

46. Slip-rings in a synchronous motor carry

A) Direct current B) Alternating current C) No current D) all of the above

47.The angle between the rotating stator flux and rotor poles is called _____ angle.

A) Torque B) Obtuse C) Synchronizing D) Power factor

48. 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

49. 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

50. 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

51. 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

52. The construction of a synchronous motor resembles

A) A series motor B) An induction motor C) An alternator D) A rotary converter

53. For power factor correction, synchronous motors operate at

A) No-load and greatly over-excited fields B) No-load and under-excited fields

C) Normal load with minimum excitation D) Normal load with zero excitation

54. Exciters of synchronous machines are

A) D.C. shunt machines B) D.C. series machines

C) D.C compound machines D) Any of the above

55. What is the name of alternator if it runs as a motor?

A) AC series motor B) Synchronous motor

C) Ring induction motor D) Squirrel cage induction motor

56.Which is used to give DC supply to the field winding of a synchronous motor?

A) A Inverter B) DC shunt generator C)Battery D) DC series generator

57.How many poles are in the pony motor compared with synchronous motor?

A) Equal no of pole B)1/2 times more than synchronous motor pole

C) 1/2 times less than synchronous motor pole D) 1/3 times more than synchronous motor pole

58. What is the purpose of pony motor?

A) To share more load B) To run at constant speed

C) To run at above rated speed D) For starting the synchronous motor

59. Where the damper winding is embedded in a synchronous motor

A) In stator winding B) At The end of field winding

C) Between the field windings D) In the middle of stator winding

60. What is the purpose of damper winding?

A) To share more loads B) To start the synchronous motor

C) To run the motor at constant speed D) To run the motor at below the rated speed

61. Which is the application of synchronous motors?

A) For lifting loads B) For traction purpose

C) For pumping the water D) For power factor correction

62. Which load is the cause for low power factor?

A) Inductive load B) Capacitive load

C) Resistive load D) Resistive and capacitive load

63. 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

64. Which is the advantage of higher power factor?

A) Efficiency increases B) Requires less copper

C) No voltage fluctuation D)Reduction in power cost

65. 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

66. Which relationship of synchronous motor is explained in V curve?

A) Armature current and field voltage B) Field current and armature voltage

C) Armature current and terminal voltage D) Armature current and field excitation current

67. Which condition synchronous motor runs as a synchronous condenser?

A) Field over excited B) Field under excited

C) Stator supplied above rated voltage D) Stator supplied below rated voltage

68. A synchronous machine is called a doubly excited machine because

A) It can be overexcited B) It has two sets of rotor poles

C) Both its rotor and sator are excited D) It needs twice the normal exciting current

69. The oscillations in a synchronous motor can be damped out by

A) Maintaining constant excitation B) Running the motor on leading power factors

C) Providing damper bars in the rotor poles faces D) Oscillations cannot be damped

70. An electric motor in which both the rotor and stator fields rotates with the same speed is called as an ..... motor

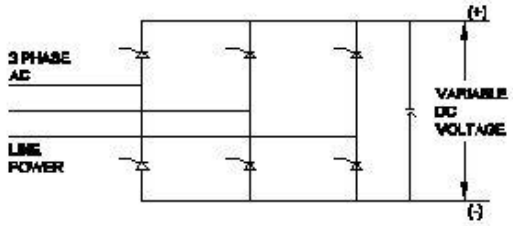
A) D.C . B) Charge C) Synchronous D) Universal

Answer Key

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

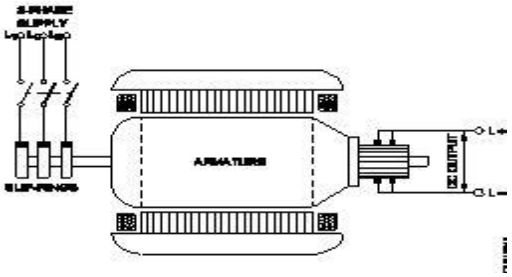
MOTOR GENERATOR SET

1 What is the name of the converter?



A) Metal rectifier B) Rotary converter C) Mercury arc rectifier D) Silicon controlled rectifier

2. What is the name of the converter?



A) Metal rectifier B) Rotary converter C) Mercury arc rectifier D) Motor-Generator set

3. Which acts as both inverter and converter?

A) Metal rectifier B) Mercury arc rectifier C) Semi-conductor diode D) Synchronous converter

4. What is the function of inverter?

A) Convert A.C to D.C B) Convert D.C to A.C

C) Smoothening A.C sine wave D) Convert pulsating DC into pure D.C

5. Which converting device can be over loaded?

A) Rectifier unit B) Rotary converter C) Motor generator set D) Mercury arc rectifier

6. What is the advantage of motor generator set?

A) Noiseless B) High efficiency

C) Low maintenance required D) DC output voltage can be easily controlled

7. Which of the following equipment needs direct current?

A) Relays B) Telephones C) Time switches D) All of the above.

8. Which of the following devices cannot convey from DC to AC?

A) Motor generator B) Motor converter C) Mercury arc rectifier D) All of the above.

9. In large motor generator sets ac motor is usually

A) Induction motor squirrel cage type B) synchronous motor

C) Induction motor wound rotor type D) any of the above.

10. In a rotary converter

A) Armature currents are DC only (B) Armature currents are ac only

C) Partly AC and partly DC (D) All of the above.

11. A rotary converter can be started

A) From DC side as DC motor B) From AC side as induction motor

C) By means of a small auxiliary motor D) Any of the above methods.

12. In a mercury arc rectifier positive ions are attracted towards

A) mercury pool B) shell bottom C) cathode D) anode.

13. For mercury arc rectifiers, the anode is usually made of

A) Aluminium B) Copper C) Tungsten D) Graphite.

14. Which of the following is the loss within the mercury arc rectifier chamber?

(A) Voltage drop at the anode (B) Voltage drop at the cathode

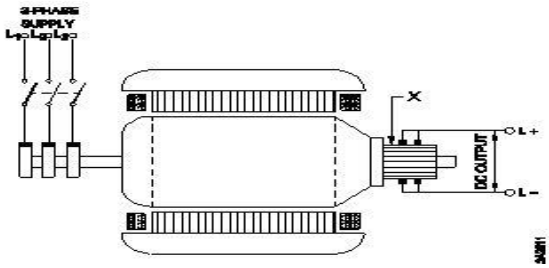
(C) Voltage drop in arc (D) All of the above.

15. In a mercury arc rectifier

A) Ion stream moves from cathode to anode B) Current flows from cathode to anode

C) Electron stream moves from anode to cathode D) Ion stream moves from anode to cathode.

16. What is the function of the part marked as X of the rotary converter?



A) Converts AC to DC B) Reduces voltage drop

C) Helps to deliver without noise D)Collects the delivered direct current

17. Which converter is having high efficiency

A) SCR converter B) Rotary converter C) Motor generator set D) Mercury arc rectifier

18. Which is the application of DC supply?

A) Street light B) Pump set motor C) Wet grinder D) To charge the battery

19. Which type of motor is used for the traction purpose

A) DC shunt motor B) DC series motor C) DC long shunt motor D) DC short shunt motor

20. Which is used to convert DC) to AC ?

A) Inverter B) Rotary converter C) Motor generator D) Mercury arc rectifier

21. Which is the disadvantage of conversion of AC to DC by motor generator set?

A) It requires more floor space B) DC output voltage is variable

C) Continuous attention required D) DC output voltage can not easily controlled

22. Where rotary converters are used?

A) For low DC power requirements B) For low DC voltage requirements

C) For large DC power requirements D) For large DC voltage requirements

23. Which is the combination of rotary converter?

A) Synchronous motor and a DC generator

B) Slip ring induction motor and a DC generator

C) Single squirrel cage induction motor and a DC generator

D) Double squirrel cage induction motor and a DC generator

24 Which converter has higher efficiency?

A) SCR B) Motor generator set C) Rotary converter D) Mercury arc rectifier

25. In mercury arc rectifier, mercury is used as

A) Conducting medium B) Ionization medium C) Electron accelerator D) A cathode.

26. In a mercury arc rectifier, mercury is used as cathode because

A) Mercury is liquid metal B) Mercury readily vaporizes

C) Mercury vapor is easily ionized D) All of above.

27. In a mercury arc rectifier which of the following flows from anode to cathode?

A) Electrons B) Ions C) Both electrons and ions D) Electrons, ions and current.

28.In a mercury arc rectifier characteristic blue luminosity is due to

A) high temperature B) electron streams C) ionization D) color of mercury.

29. Ripple frequency of full wave rectifier working on 50 Hz supply will be

A) 25 B) 50 C)100 D) 200.

30.In mercury arc rectifiers, mercury is selected as cathode because

A) Its ionization potential is low B) It has low specific heat

C) It has small latent heat of vaporization D) All of the above.

31.A silicon controlled rectifier is a

A) Unijunction device B) Device with three junction

C) Device with four junctions D) None of the above.

32.For single phase supply frequency of 50 Hz, ripple frequency in full wave rectifier is

A) 25 B) 50 C)100 D) 200.

33.Which of the following is known as metal rectifier

A) Selenium disc rectifier B) Copper oxide rectifier

C) Gas tube diode D) All of the above.

34.A rotary converter

A) Combines the functions of an induction motor and DC generator

B) Has a set of slip rings at both ends

C) Has an armature and two fields

D) Is a synchronous motor and a dc generator combined.

35.The advantage of motor generator set is

A) DC output voltage is practically constants

B) DC output can be controlled by adjusting shunt field regulator

C) Unit is self-starting

D) All of the above.

36. A rectifier is a

A) Bilateral device B) Linear device C) Non-linear device D) Passive device.

37. A rotary converter in general construction and design is more or less like

A) Transformer B) An induction motor C) An alternator D) Any DC machine

38. Which of the following is reversible in action ?

A) Motor generator set B) Motor converter C) Rotary converter D) Any of the above

39.In which of the following equipment direct current is needed?

A) Telephones B) Relays C) Time switches D) All of the above

40.A rotary converter is a single machine with

A) One armature and one field B) Two armatures and one field

C) One armature and two fields D) None of the above

41.Which of the following metals is generally manufactured by electrolysis process ?

A) Load B) Aluminium C) Copper D) Zinc E) None of the above

42.With a motor converter it is possible to obtain D.C. voltage only upto

A) 200-100 V B) 600—800 V C) 1000—1200 V D) 1700—2000 V

43 A rotary converter operates at a

A) low power factor B) high power factor C) zero power factor D) none of the above

44.The efficiency of the copper oxide rectifier seldom exceeds

A) 90 to 95% B) 85 to 90% C) 80 to 85% D) 65 to 75%

45.Which of the following rectifiers have been used extensively in supplying direct current for electroplating ?

A) Copper oxide rectifiers B) Selenium rectifiers

C) Mercury arc rectifiers D) Mechanical rectifiers (e) None of the above

46.Which of the following is the loss within the mercury arc rectifier chamber ?

A) Voltage drop in arc B) Voltage drop at the anode

C) Voltage drop at the cathode D) All of the above

Answer Key

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

ELECTRONIC PRACTICE

1 Which resistor is used to measure light intensity?

(A)VDR (B) NTC (C)PTC (D) LDR

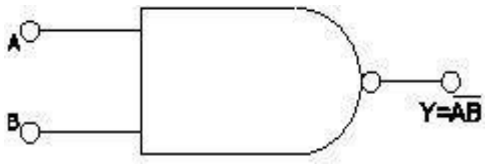
2 Which code indicates silicon semiconductor diode?

(A)OA 79 (B) BY 126 (C) IN 4007 (D) 2N 3055

3 Which is a active component?

(A)Inductor (B) Resistor (C)Capacitor (D) Transistor

4 What is the name of the symbol?



(A) Two input OR gate

(B) Two input AND gate

(C) Two input NOR gate

(D) Two input NAND gate

5 Which is a passive component?

(A)Diac (B) Diode (C) Transistor (D) Capacitor

6 What is the name of the device symbol?

(A)SCR (B)IGBT

(C)DIAC (D)TRIAC

7 How many characters are in hexadecimal number system?

(A)6 (B)8 (C)12 (D)16

8 Which electronic circuit generates A.C signal without input?

(A)Filter circuit (B)Rectifier circuit (C)Amplifier circuit (D)Oscillator circuit

9 What is the minimum voltage required in the base emitter junction to conduct a silicon transistor?

(A)0.2 V – 0.3 V (B)0.4 V – 0.5 V (C) 0.6 V – 0.7 V (D) 0.8 V – 0.9 V

10 What is the minimum and maximum value of resistor with four colour bands, red, violet, orange and gold respectively?

(A) 23750Ω - 26250Ω (B)24700Ω - 27300Ω

(C)25650Ω - 28350Ω (D)22400Ω - 33600Ω

11 What is the reason for barrier voltage is more in silicon material?

(A)Lower atomic number (B)Resistance is very low

(C)Doping percentage is more (D)Valance electrons are two only

12 Which filter circuit is capable of removing voltage spikes in the rectifier circuit?

(A)LC filter (B)RC filter

(C)Capacitor input filter (D)Series inductor filter

13 Which is the advanced version of power electronic component used in the output stage in drives?

(A)FET (B)UJT (C)SCR (D)IGBT

14 How the decimal number can be converted into binary number?

(A)Divide decimal by 4 (B)Multiplying decimal by 4

(C)Dividing decimal by 2 (D)Multiplying decimal 2

15 What is the purpose of using binary coded decimal (BCD) system in digital circuits?

(A) Storing the data inputs (B) Control the binary system

(C) Interface to binary system (D)Segregating the input parameters

16 Which logic gate refers the truth table?

A	B	Y = AB
0	0	0
1	0	0
0	1	0
1	1	1

(A) OR gate

(B) NOT gate

(C) AND gate

(D) NOR gate

17 Which quantity can be measured by CRO?

(A)Frequency (B)Inductance (C)Resistance (D)Power factor

18 Which is the main application of SCR?

(A)Amplifier (B)Oscillators (C)Multi vibrators (D)Speed control of motors

19 What are the criteria to decide a material as conductor, semi conductor and insulator?

(A) Atomic bonding structure of atom (B) Existence of valance electrons in atom

(C) Atomic weight of the atom of the material (D)Atomic number of the atom of the material

20 Which doping material is used to make P-type semi conductor?

(A)Boron (B)Arsenic (C)Antimony (D)Phosphorous

21 Which type of biasing is required to a NPN transistor for amplification?

(A) Base ground, emitter and collector positive

(B) Base negative, emitter positive and collector negative

(C) Base positive, emitter negative and collector positive

(D) Base positive, emitter negative and collector negative

22 Why negative feedback is required in amplifier circuits?

(A) To reduce the distortion (B) To increase the amplification factor

(C) To increase the output voltage gain (D) To increase the output current gain

23 What is the purpose of DIAC in power control circuits?

(A) As rectifier (B) For triggering (C) As an oscillator (D) For amplification

24 Which type of control device is used in electronic fan regulator control circuits?

(A)FET (B)UJT (C)DIAC (D)TRIAC

25 Which quadrant operation of SCR delivers heavy current in reverse biasing?

(A) First quadrant (B) Third quadrant (C) Fourth quadrant (D) Second quadrant

26 What is the use of time-base control switch or knob in the CRO?

(A) Select sweep speed (B) Select input voltage range

(C) Select input signal voltage (C) Select intensity of the beam

27 Why a snubber circuit is used in the TRIAC motor control circuit?

(A) To avoid false triggering (B) To increase the life of TRIAC

(C) To increase the motor torque (D) To maintain the motor speed constant

28 What is the output DC voltage in half wave rectifier, if the input AC voltage is 24 volt?

(A) 24 Volt (B) 12 Volt (C) 9.6 Volt (D) 10.8 Volt

29 Why most of semi conductor devices are made by silicon compared to germanium?

(A) High barrier voltage (B) High resistance range

(C) High thermal conductivity (D) High current carrying capacity

30 What is the output voltage if the centre tap of transformer is open circuited in a full wave rectifier

circuit?

(A) Zero voltage (B) Full rated output

(C) Half of the rated output (D) One fourth of rated output

31 Which oscillator provides high accurate stable frequency?

(A) Hartley oscillator (B) Colpitts oscillator

(C) Quartz crystal oscillator (D) R.C phase shift oscillator

32 What is the characteristic property of base material in a transistor?

(A) Lightly doped and very thin (B) Heavily doped and very thin

(C) Lightly doped and very larger (D) Heavily doped and very larger

33 What is the main application of a Field Effect Transistor (FET)?

(A) Voltage control device (B) Current control device

(C) Positive feedback device (D) Low input impedance device

34 What is the main function of Uni Junction Transistor (UJT)?

(A) Relaxation oscillator (B) Broadcast transmitter

(C) Loud speaker amplifier (D) Microphone input device

35 How the gate terminal of N channel JFET biased?

(A) Gates are reverse biased (B) Gates are forward biased

(C) Gates are forward biased with drain (D) Gates are reverse biased with source

36 Which device is made up of using the methods of point contact, grown, diffusion and alloy junctions?

(A) Inductor (B) Resistor (C) Capacitor (D) Transistor

37 Why the collector region is physically made larger than emitter region in a transistor?

(A) It has to dissipate more heat

(B) Output taken from collector terminal

(C) Base collector region is reverse biased

(D) Collector region always operate with high voltage

38 What is the function of a transistor if emitter to base and collector to base are forward biased?

(A) Acts as an amplifier (B) Acts as an oscillator

(C) Acts as an open circuit (D) Acts as a closed switch

39 What is the main advantage of a class A amplifier?

(A) Minimum distortion (B) Maximum current gain

(C) Maximum voltage gain (D) Minimum signal to noise ratio losses

40 Which electronic circuit produces signal waves or pulses without an input?

(A)Detector (B)Amplifier (C)Oscillator (D)Modulator

41 Which circuit is essential to maintain oscillations or waves in an oscillator circuit?

(A) Rectifier with filter (B) Voltage multiplier

(C) Negative feed back (D) Positive feed back

42 What is the main application of uni junction transistor?

(A) Rectification (B) Amplification

(C) Regulator circuits (D) Triggering circuits

43 Which device has very high input impedance, low noise output, good linearity and low inter electrode capacity?

(A) NPN transistor (B) PNP transistor

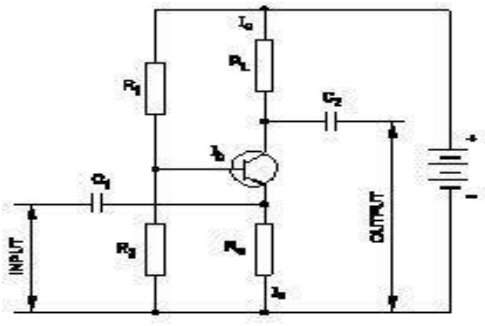
(C) Field effect transistor (D) Uni junction transistor

44 What is the difference in current control of MOSFET compared to JFETs?

(A) Insulating layer instead of junction (B) Using N material instead of P material

(C) Using P material instead of N material (D) Using N material gate instead of P material

45 What is the type of amplifier circuit?



(A) Common base amplifier

(B) Common emitter amplifier

(C) Class B push pull amplifier

(D) Common collector amplifier

46 What is the peak voltage of 220v rms AC voltage?

(A)310.02 V (B) 311.17 V (C) 312.25 V (D) 315.20 V

47 How the input impedance of CRO can be increased?

(A) By adding resistance to CRO probe

(B) By adding resistance to trigger level circuit

(C) By increasing time/base attenuator switch position

(D) By increasing volts/cm attenuator switch position

48 What is the frequency of the displayed signal on CRO screen covered by 5 divisions with a time base setting of 0.2 micro seconds?

(A) 1.0 KHz (B)10.0 KHz (C) 100.0 KHz (D) 1000.0 KHz

49 What defect will occur in the radio, if the pulsations are not removed from the input of the rectifier?

(A) Improper tuning (B) No response

(C) Humming sound (D) Works with low volume

50 How does the depletion region behave?

(A) As resistor (B) As insulator (C) As conductor (D) As semi conductor

51 What is the power gain of CE amplifier with a voltage gain of 66 and β (Beta) of the transistor is 100?

(A) 1.5 (B) 166 (C) 0.66 (D) 6600

52 What is the effect, if SCR is latched into conduction and gate current is removed in DC?

(A) SCR gets cut off (B) Current through SCR OFF

(C) Output voltage will be reduced (D) Gate loses control over conduction

53 What is the effect of pinch-off voltage in JFET?

(A) No depletion region exists (B) Drain current becomes zero

(C) Reverse bias voltage becomes zero (D) Width of channel has maximum value

Answer

1. D 2. B 3. D 4. D 5. D 6. C 7. D 8. D 9. C 10. C 11. A 12. A 13. D 14. C 15. A

16. C 17. A 18. D 19. B 20. A 21. C 22. A 23. B 24. D 25. B 26. A 27. A 28.D 29.A 30. A 31.A 32. A 33. A 34. A 35. B 36. D 37. A 38. D 39. A 40. C 41. D 42. D 43.C 44. A 45. D 46. B 47. A 48. D 49. C 50. B 51. D 52. D 53. B I

Control Panel Wiring

54 Which supply indicates by the colour of conductor exhibited on Red, Blue and Black?

(A) Supply DC 3 wire system (B) Single phase AC system

(C) Supply AC system 3 phase (D) Apparatus AC system 3 phase

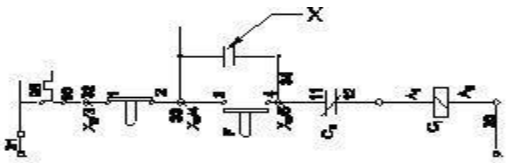
55 Which cable ties are used to bunch the wires?

(A) Silk ties (B) P.V.C ties (C) Nylon ties (D) Cotton ties

56 Which device is avoided in the panel board assembly?

(A) Sensors (B) Indicating lamp (C) Isolating switch (D) Push button switch

57 What is the name of the device marked X'?



(A) Stop button

(B) Start button

(C) Main contact

(D) Auxiliary contact

58 What is the name of the wiring accessory used in control panel wiring?

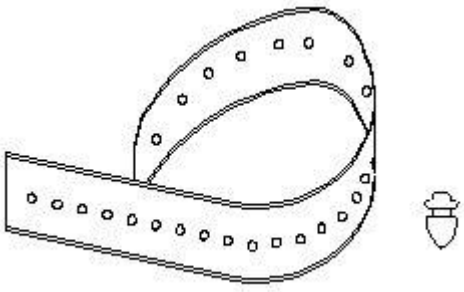
(A) DIN rails

(B) G channel

(C) Grommets

(D) Race ways

59 What is the name of the accessory used in control panel wiring



(A)Wire ferrules

(B) Wire sleeves

(C) Nylon cable ties

(D) Cable binding strap

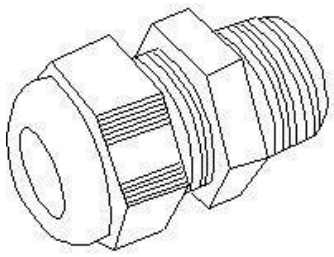
60 What is the name of the accessory used in control panel wiring?

(A) Lugs

(B) Thimble

(C) Grommet

(D) Terminal connector



61 Which device protects from overload and short circuit in a panel board?

(A) Isolating switch (B) Time delay relay

(C) Thermal overload relay (D) Miniature circuit breaker

62 Which switch with an actuator is operated by the motion of a machine or part of an object?

(A) Limit switch (B) Toggle switch

(C) Isolating switch (D) Push button switch

63 Which switch is operated at OFF load condition?

(A) Limit switch (B) Isolating switch

(C) Two way switch (D) Push button switch

64 What is the reason for providing two separate Earthing in panel board?

(A) Panel board (B) is made in metal box

(C) Control the stray field in the panel (D) Reduce the voltage drop in panel board

65 Which circuit, the limit switches are used?

(A) Lift circuits (B) Street lighting

(C) Motor control circuits (D) Domestic power circuits

66 How the control circuit voltage and power in a contactor are to be selected?

(A) As per rated current (B) As per supply voltage

(C) As per no volt coil rating (D) As per the type of supply

67 What is the criteria to select the contactor?

(A) Type of supply (B) Type of load connected

(C) Supply voltage and load (D) Place of use the contactor

68 Which accessory is used to mount MCB,OLR in the panel board without using screws?

(A) DIN Rail (B) G. channel (C) Grommets (D) PVC channel

69 Which type of device protects motors from overheating and over loading in a panel board?

(A) Rectifier (B) Limit switch

(C) Thermal relay (D) Electro mechanical relay

70 What is the use of G' channels in control panel?

(A) For fixing relays (B) For fixing contactors

(C) For fixing instruments (D) For fixing terminal connectors

71 What is the function of limit switch in control panel wiring?

(A) Controls machine from over heat (B) Controls machine from over speed

(C) Controls machine from over loading (D) Controls distance movement of any machine

72 Which is the correct sequence operation of contactors for operating automatic star delta strarter?

(A) Main→Star→Delta→Timer (B) Star→ Main→Timer→Delta

(C) Main→Timer→Delta→Star (D) Star→ Timer →Main →Delta

73 Why control panels are provided with control transformer?

(A) To maintain rated voltage to load (B) To operate the auxiliary circuits

(C) To maintain rated main supply voltage (D) To supply reduced voltage to power circuit

74 What happens, if time delay relay of a auto star delta starter still in closed condition after starting?

(A) Starts and stop (B) Runs normally (C) Runs in star only (D) Runs in delta only

75 What is the use of PVC channel in a control panel wiring?

(A) Mounting MCB (B) Mounting relays

(C) Path way for electrical wiring and protection (D) Mounting double deck terminal contactor

76 What is the purpose of thermal over load relay in control panel?

(A) Switching ON/OFF the circuit (B) Protect the circuit from earth fault

(C)Control the circuit based on time delay (D) Protect the motor from overheating and loading

77 Why sequential control of motors is required in an industrial application?

(A) To share more loads (B) To reduce power consumption

(C) To minimize the operating cost (D) To increase the accuracy of operation

78 Which material is used to make open frame bimetallic adjustable thermostat contacts?

(A) Silver (B) Brass (C) Copper (D) Bronze

79 What is the purpose of DIN-rail used in control panel wiring?

(A) It provides a path way for electrical wiring

(B) Install the high powered circuit accessories

(C) Mounting the double deck terminal connectors

(D) Mounting the control accessories without screws

80 Which device controls the operations in sequential control systems?

(A) Timer (B) Relays (C) Contactor (D) Control transformer

81 What is the purpose of control transformer used in control panel wiring?

(A) To maintain constant terminal voltage

(B) To supply the power to the auxiliary circuits

(C) To control the supply voltage to the contactor

(D) To protect the control elements from over voltage fault

82 How the contacts in a contactor can be engaged for working?

(A) By manual operation

(B) By mechanical settings

(C) By operating electromagnet to change the position

(D) By using bimetallic strip to change the position

83 Which device prevents flare out of stripped and stranded cables in the panel board?

(A) Sleeves (B) Wire ferrules

(C) Lugs and thimbles (D) Cable binding straps and button

84 What essential feature to be considered while designing a layout of control panel?

(A) Proper type of protection and measuring system

(B) Inside area and number of indicating lights in front panel

(C) Suitable method of labeling and cable harnessing

(D) Outside dimensions and swing area of cabinet door

85 Why power and control wirings run in separate race ways?

(A) To reduce heat (B) To reduce the radio interference

(C) To increase the insulation resistance (D) To increase the current carrying capacity

86 Why the motor is not changing the direction, if reverse push button is pressed in forward and reverse control star delta starter?

(A) No volt coil is not energized (B) Fault in forward contactor

(C) Due to interlock in reverse contactor (D) No voltage exist in reverse contactor

Answer

54. A 55. C 56. A 57. D 58. A 59. D 60. C 61. D 62. A 63. B 64. D 65. A 66. C 67. C 68. A 69. C 70. D 71. D 72. B 73. B 74. D 75. C 76. D 77. D 78. A 79. D 80.A 81. B 82. C 83. C 84. D 85. B 86. C

AC & DC Drives

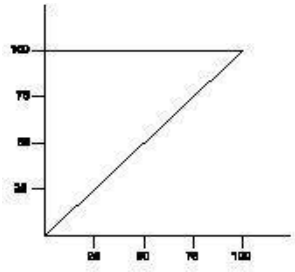
87 Which control system consumes very low power for motion control in AC and DC motors?

(A) Field control (B) Drives control (C) Voltage control (D) Armature control

88 Which drive is classified according to mode of operation?

(A) Group drive (B) Manual drive (C) Individual drive (D) Continuous duty drive

89 What is the name of the characteristic curve in D.C drive?



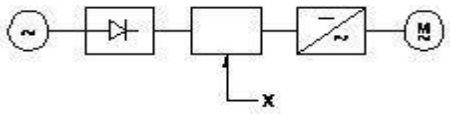
(A) Speed Vs torque characteristic

(B) Torque Vs field current characteristic

(C) Speed Vs armature current characteristic

(D) Field current Vs armature current characteristic

90 What is the name of the component marked as X' in the block diagram of AC drive?



(A) Rectifier

(B) D.C bus

(C) Inverter

(D) A.C motor

91 What is electric drive?

(A) A device used as prime mover for generator

(B) A device converts A.C to D.C supply

(C) An electro mechanical device for controlling Motor

(D) A machine converts mechanical energy into electrical

92 What is the full form of B.O.P in D.C drive?

(A) Bridge Operation Panel (B) Basic Operational Panel

(C) Basic Operation Programme (D) Bridge Operator Programme

93 Which is the classification of drive according to dynamics and transients?

(A) Short time duty drive (B) Intermittent duty drive

(C) Automatic control drive (D) Variable position control drive

94 What is the function of power controller in drive circuits?

(A) It sounds an alarm in no load conditions

(B) It detects the overloading condition of motor

(C) It reduce motor current during transient operation

(D) It maintain the torque at low voltage conditions

95 Why it is necessary to keep V/F ratio constant in a drive?

(A) Keep the stator flux maximum (B) Maintain the rotor current minimum

(C) Maintain the speed of motor constant (D) Maintain the rated torque at all speeds

96 Which power modulator used in the electric drive system?

(A) Cyclo converters (B) Frequency multiplier

(C) Phase sequence indicator (D) Servo controlled voltage stabilizer

97 Which type of sensing unit employed in drive system?

(A) Opto coupler (B) Speed sensing

(C) Photo voltaic cell (D) Resistance temperature detector

98 Which type of machine in industries is provided with multi motor electric drive?

(A) Rolling machine (B) Air Compressor

(C) Shearing machine (E) Heavy duty electric drilling machine

99 Which control system is used for Eddy current drives?

(A) Slip controller (B) Rectifier controller

(C) AC voltage controller (D) DC chopper controller

100 What is the purpose of JOG key in control panel of D.C drive?

(A) Stop the motor (B) Restart the motor

(C) Inching operation (D) Reverse the direction of motor

101 What is the purpose of LCD on basic operator panel in D.C drive?

(A) Indicate the fault (B) Display the speed

(C) Monitor the parameter (D) Display availability of supply

102 What is the reason of using shielded cable power for connecting low level signal circuits in DC drives?

(A) Easy for connection (B) Good appearance

(C) Protects from mechanical injuries (D) Eliminates the electrical interference

103 Which device controls the speed of A.C motor in A.C drive?

(A) Field supply unit (FSU) (B) COMMS technology box

(C) Speed feedback technology box (D) Microprocessor based electronic device

104 What is the main use of A.C drive?

(A) High starting torque (B) Group drive motors

(C) Control step less speed in motors (D) Interlocking system in industries

105 What is the function of IGBT in AC drive?

(A) Smoothening incoming A.C supply (B) Controls the power delivered to the motor

(C) Stabilize the output voltage from the rectifier (D) Converts incoming A.C power into D.C output

106 Why the A.C drives are better suited for high speed operation?

(A) High starting torque (B) Robust in construction

(C) Having lighter gauge winding (D) No brushes and commutation

107 What is the advantage of AC drive compared to DC drive?

(A) Requires less space

(B) Installation and running cost is less

(C) Fast response and wide speed range of control

(D) Power circuit and control circuits are simple

108 Which is the application of single quadrant loads operating in first quadrant in drives?

(A) Hoists (B) Elevators (C) Conveyors (D) Centrifugal pumps

109 What is the function of Field Supply Unit (FSU) in DC drive?

(A) Produces required firing current to the firing circuit

(B) Provides variable voltage to the field winding of motor

(C) Provides a constant voltage to the field winding of motor

(D) Provides a constant voltage to the armature of the motor

110 What is the disadvantage of DC drive?

(A) Not suitable for high speed operation

(B) More complex with a single power conversion

(C) More expensive than AC drive for high capacity motor

(D) Installation of DC drives is more complicated

111 Which is the correct sequence operation of key button in BOP of AC drive to change the direction of rotation?

(A) Press ON → REV →ON (B) Press OFF → REV → ON

(C) Press ON → OFF → REV →ON (D) Press ON →REV → OFF →ON

112 What is the purpose of PROG / DATA button in BOP of AC drive?

(A) To change the parameter setting

(B) To store the entered data and factory stored data

(C) To display the data direction of rotation forward / REV

(D) To display the data status of frequency and current

113 Which is proportional to the torque in D.C motor?

(A) Back e.m.f (B) Field current (C) Terminal voltage (D) Armature current

114 What is IGBT in VF drive?

(A) Inverter switching device (B) D.C bus switching device

(C) Rectifier switching device (D) Field supply switching device

115 What is the function of VSI drives?

(A) Converts A.C to D.C (B) Converts A.C to A.C

(C) Converts D.C to A.C (D) Converts D.C to D.C

116 Why the A.C drives are mostly used in process plant?

(A) Easy to operate (B) Robust in construction

(C) Very high starting torque (D) Maintenance free long life

117 How the base speed of D.C shunt motor can be increased by using D.C drive?

(A) By reducing the field current (B) By increasing the field current

(C) By increasing the supply voltage (D) By reducing the armature voltage

118 How the constant torque can be obtained from armature and field-controlled drives?

(A) By reducing the field current (B) By increasing the field current

(C) By reducing the armature current (D) By controlling the armature voltage

Answer

87. B 88. D 89. A 90. B 91. C 92. B 93. D 94. B 95. D 96. A 97. B 98. A 99. A 100. C 101. C 102. D 103. D 104. C 105. B 106. D 107. B 108. D 109. C 110. A 111. C 112. B 113. D 114. A 115. B 116. D 117. A 118. D

Inverter and UPS

1. What is the minimum permissible single phase working voltage, if the declared voltage is 240V as per ISI? |

A 233 V B 228 V C 216 V D 211 V

2. Which term refers that the mass of a substance liberated from an electrolyte by one coloumb of electricity? |

A Electrolysis | B Electro plating | C Electro copying| D Electro chemical equivalent |

3. What is the full form of abbreviation UPS? |

A Uniform Power Supply | B Universal Power Supply |

C Unregulated Power Supply | D Uninterrupted Power Supply |

4. Which is frequency converter? |

A Rectifiers B D.C choppers | C Cyclo converters | D D.C to A.C converters |

5. What is the full form of PWM? |

A Pulse Wide Modulation | B Pulse Width Modulation |

C Phase Wide Modulation | D Phase Width Modulation |

6. What is the advantage of on-line UPS over offline UPS? |

A Supplies constant power output | B It gives constant output frequency |

C Works on single phase or three phase supply D Free from change over and transition problems |

7. Which electronic circuit is used in a automatic voltage stabilizer to produce constant output voltage?

A Rectifier circuit | B Amplifier circuit | C Oscillator circuit | D Feedback circuit|

8. Which feedback network is used for automatic voltage stabilizer? |

A Current divider network | B Voltage divider network |
C Tapped transformer network | D Resistance temperature detector network |

9. Which electrical device is actuating the voltages in a stepped voltage stabilizer? |

A Autostat | B Output transformer |
C Over voltage relay | D Under voltage relay |

10. What is the effect in internal resistance of a discharged cell? |

A Increase | B Decrease | C Becomes zero | D Remain same |

11. Calculate the voltage and ampere/hour, if four cells rated as 1.5 v and 8 A.H are in parallel? |

A 6 V and 24 AH B 3 V and 16 AH C 4.5 V and 8 AH D 1.5 V and 32 AH

12. Which is the application of automatic stepped voltage stabilizer? |

A Geyser | B Grinder | C Television | D Pump motor |

13. Which is the function of an inverter? |

A Converts A.C voltage into D.C voltage | B Converts D.C voltage into A.C voltage |

C Converts D.C voltage into higher D.C voltage | D Converts A.C voltage into higher A.C voltage |

14. What is the purpose of output transformer in inverters?

A Step up input AC | B Step down input AC |

C Step up AC from amplifier | D Step down AC from amplifier |

15. Which type of output transformer is used in automatic voltage stabilizer? |

A Auto transformer | B Static transformer |

C Ring core type transformer D Ferrite core type transformer |

16. Which principle the constant voltage transformer works?

A Self-induction principle | B Fall in potential principle |

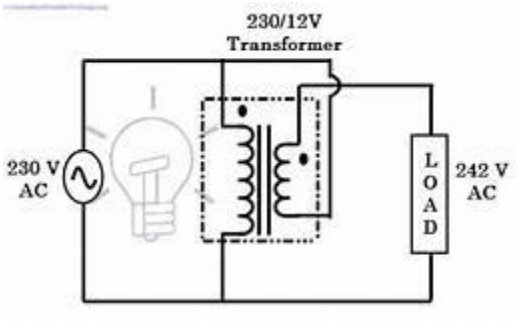
C Ferro-resonant principle | D Mutual induction principle |

17. Which transformer is used in servo voltage stabilizer? |

A Step up transformer | B Step down transformer |

C Torodial autotransformer | D Constant voltage transformer

18. What is the type of A.C voltage stabilizer? |



A Servo voltage stabilizer | B Automatic voltage stabilizer |

C Manual stepped voltage stabilizer | D Constant voltage transformer stabilize |

19. Which instrument is used to check short circuit faults in electronic circuit in voltage stabilizer? |

A Ammeter B Voltmeter | C Ohmmeter | D Multimeter |

20. What are the important stages in a simple inverter? |

A Oscillator and rectifier stages | B Oscillator and amplifier stages |

C Amplifier and transformer output stages | D Oscillator, amplifier and transformer output stages |

21. Where square wave inverters are used?

A Computers B TV receiver | C DVD players | D General lighting |

22. How the backup time of UPS can be increased? |

A Increase the VA rating of UPS | B Increase the AH capacity of battery |

C Decrease the AH capacity of battery | D Maintain battery terminal voltage always 90% of rating |

23. How the hard sulphation defect in secondary cell can be prevented? |

A Provide trickle charging | B Provide freshening charge |

C Provide constant current charging | D Provide constant potential method charging |

24. Which part in UPS supplies continuous output voltage in case of input voltage failure? |

A Battery unit | B Inverter unit | C Rectifier unit | D Controller unit |

25 What is the effect during loading of the cell, the current strength falls and become zero? |

A Buckling | B Polarization | C Local action | D Amalgamation |

26. What is the reason for having low back up time in UPS? |

A Fault in inverter circuit | B Battery is short circuited |

C Mains earthing is not proper | D Ampere hour (A.H) capacity of battery is not sufficient |

27. Which is the cause for the fault if the output voltage of UPS is higher than normal? |

A Battery get short circuited | B Defective feedback circuit |

C Input voltage is very high | D Relay points are joined together

28. What is the reason for tripping the UPS with full load? |

A Main supply failure | B Incorrect over load settings |

C Battery charger input fuse blown out D Loose connection in battery terminal.

29.The ambient temperature of voltage stabilizer is _____.

A. 50 to 100°C B. 0 to 55°C C. 10 to 20°C D. 60 to 80°C

30.The correction speed of voltage stabilizer is _____.

A. 10 V/sec B. 15 V/sec C. 20 V/sec D. 25 V/sec

31.Which one of the following is a servo controlled voltage stabilizer?

A. Single relay stabilizer B. Schmitt trigger stabilizer

C. Manual buck-boost stabilizer D. None of the above

32.The cause of battery failure is _____.

A. High or uneven temperatures B. Inaccurate float charge voltage
C. Low temperature D. Both (A) and (B)

33.Output of UPS is_____

A. Sine wave B. Rectangular wave C. Triangular wave D. None of the above

34.Batteries must be stored in _____.

A. Clean environment B. Dirty place C. Wet place D. All the above

35.The life span of the battery will affect due to _____.

A. Poor Ventilation B. Loose Terminal C. High Temperatures D. All the above

36.Which one of the following is time based maintenance?

A. Periodic maintenance B. Corrective maintenance C. Breakdown maintenance D. Both (B) and (C)

37.Which one of the following comes under preventive maintenance?

A. Motor ventilation B. Humidity and consideration C. Loose connection D. All the above

38.Which one of the following comes under predictive maintenance?
A. Bearing consideration B. Surge test C. Lubrication interval D. Both (A) and (B)

39.The necessity of preventive maintenance is _____.

A. To eliminate major failure of machine B. To avoid accidents
C. To reduce overall cost maintenance D. All the above

40.Which type of maintenance is not directly included in the total maintenance cost, but might be a component of total cost?
A. Preventive B. Breakdown C. Predictive D. None of these

41.Less maintenance troubles are experienced in case of _____.

A. Slip ring induction motor B. Squirrel cage induction motor
C. DC motor D. None of the above

42.The test recommended if there is a fault in stator winding_____.
A. Check for continuity B. Examine bearing for play
C. Measure line frequency with a frequency meter D. None of the above

43.The test recommended if rotor winding is open circuited.

A. Check for continuity B. Examine bearing for play
C. Measure line frequency with a frequency meter D. Examine the rotor bars and joints

ANSWER KEY

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

GENERATION TRANSMISSION AND DISTIBUTION SYSTEM

1.The primary source of energy is _____.

A. Coal oil and uranium B. Hydrogen, oxygen and water
C. Wind, biomass and geothermal D. None of the above

2.In fuel cell, the _____ energy is converted into electrical energy.

A. Mechanical B. Chemical C. Heat D. Sound

3.Which one of the following is not a renewable energy sources?

A. Solar energy B. Wind energy C. Tidal energy D. Nuclear energy

4.The secondary sources of energy are _____.

A. Solar, wind and water B. Coil, oil and uranium C. Either (A) or (B) D. Neither (A) or (B

5.In India coal reverses are rich in _____.

A. UP B. Tamil Nadu C. Rajasthan D. Bihar

6.A steam power station requires space _____.

A. Equal to diesel power station B. More than diesel power station
C. Less than diesel power station D. None of the above

7.Steam power plant converts _____.

A. Heat energy of coal into steam energy B. Heat energy of coal into electrical energy
C. Electrical energy into steam energy D. None of the above

8.The turbine used in thermal power plants is _____.

A. Water turbine B. Steam turbine C. Pelton wheel D. Kaplan

9.The steam turbine converts _____.

A. Steam energy to mechanical energy B. Steam energy into electrical energy
C. Steam energy into coal energy D. Electrical energy into steam energy

10.The input to the steam turbine is _____.

A. Super-heated steam B. Wet steam C. Low pressure temperature D. None of these

11.The output from the steam turbine is coupled to _____.

A. Condenser B. Bus bar C. Coal inputD. Alternator

12.Steam is generated in _____.

A. Boiler B. Condenser C. Economizer D. Super heater

13.The thermal power station causes _____.

A. Water pollution B. Air pollution C. Both (A) and (B) D. None of the above

14.Modern steam plants works on which of the following cycles?

A. Carnot cycle B. Rankine cycle C. Otto cycle D. Bell-coleman cycle

15.What would be the most important factor under consideration for the site selection of a thermal plant?

A. Availability of fuel B. Availability of water
C. Distance from the populated area D. Cost and the type of land

16.The amount of heat produced by the complete combustion of a unit weight of fuel is known as _____.

A. Energy B. Power C. Calorific value D. None of these

17.In case of solid fuels, the caloric value is expressed as _____.

A. k.cal/litre B. k.cal/kg C. litre/k.cal D. kg/k.cal

18.The calorific value of lignite in k.cal/kg _____.

A. 5000 B. 7600 C. 8500 D. 11000

19.The calorific value of bituminous coal in k.cal/kg _____.

A. 5000 B. 7600 C. 8500 D. 11000

20.Pulverizations of coal mean _____.

A. Burning the coal B. Crushing the coal C. Mixing coal with oil D. None of these

21.Coal used for thermal power stations is also called as _____

A. Char coal B. Coke C. Steam coal D. Soft coal

22.One kWh is equal to _____.

A. k.cal B. 860 k.cal C. 760 k.cal D. 660 k.cal

23.The function of condenser is to _____.

A. Cool the steam B. Heat the steam C. Supply cool water to turbine D. None of the above

24.A low grade coal has _____.

A. High calorific value B. Low ash content C. No heat content D. High ash content

25.Pulverisation of coal is done for _____.

A. Easy transportation B. Reducing burning time
C. Evaporating moisture D. Easy measuring the quantity and weight

26.Cooling towers are used if _____.

A. Pollution is to be avoided B. Steam is not be condensed
C. Efficiency is to be improved D. Water in large quantity is not available

27.Which of the following enters the super heater of a boiler?

A. Cold water B. Hot water C. Wet steam D. Super-heated steam

28.Which part of the boiler will have lightest pressure?

A. Economizer B. Super heater C. Steam drum D. Feed water

29.The efficiency of chimney is approximately _____.

A. 80% B. 40% C. 20% D. 0.25%

30.In jet type condenser _____.

A. Cooling water passes through tubes and steam surrounds them
B. Steam passes through tubes and cooling water surrounds them
C. Steam and cooling water mix
D. Steam and cooling water do not mix

31.In a surface condenser if air is removed there is _____.

A. Fall in absolute pressure maintained in condenser
B. Rise in absolute pressure maintained in condenser
C. No change in absolute pressure in the condenser
D. Rise in temperature of condensed steam

32.Evaporative type of condenser has _____.

A. Steam in pipes surrounded by water B. Water in pipes surrounded by steam
C. Either (A) or (B) D. None of the above

33.The average ash content in Indian coals is about _____.

A. 5% B. 10% C. 15% D. 20%

34.Economisers improve boiler efficiency by _____.

A. 1 to 5% B. 4 to 10% C. 10 to 12% D. 50 to 60%

35.Primary air is that air which is used to _____.

A. Reduce the flame length B. Increases the flame length
C. Transport and dry the coal D. Provide air around burners for getting optimum combustion

36.Secondary air is the air used to _____.

A. Reduce the flame length B. Increase the flame length
C. Transport and dry the coal D. Provide air round burners for getting optimum combustion

37.Pulverized fuel is used for _____.

A. Saving fuel B. Better burning C. Obtaining more heat D. All of the above

38.Which of the following coals has the highest calorific value?

A. Peat B. Lignite C. Bituminous D. Anthracite coal

39.The height of chimney in a steam power plant is governed by _____.

A. Flue gases quantity B. The drought to be produced C. Control of pollution D. None of the above

40.Fuel gases are produced in _____.

A. Chimney B. Boiler C. Coal handling plant D. Ash handling plant

41.Flue gases are _____.

A. Hot gases B. Cool gases C. Harmful gases D. None of these

42.Air pre heater in a steam power plant _____.

A. Recovers the heat from the flue gases leaving the economizer B. Improves the combustion rate
C. Raise the temperature of furnace gases D. All of the above
43.Which part of the boiler will be at height pressure?

A. Economizer B. Super heater C. Steam drum D. Feed water
44.Cooling tower in thermal power plants are needed if _____.

A. Pollution is to be avoided B. Steam not to be condensed
C. Efficiency is to be improved D. Water in large quantities is not available
45.The modern steam turbines are _____.

A. Reaction type B. Impulse type C. Impulse-reaction type D. None of these
46.The overall efficiency of thermal power plant is equal to _____.

A. Rankine cycle efficiency B. Cannot cycle efficiency
C. Regenerated cycle efficiency x generator efficiency D. Boiler efficiency x turbine efficiency x generator efficiency
47.The overall efficiency of the thermal plants is _____.

A. Less than 30% B. Between 30% to 50% C. Between 50 to 80%D. More than 80%
48.Reheat cycle in stem power plant is used to _____.

A. Utilise heat of flue gases B. Increase thermal efficiency
C. Improve condenser performance D. Reduce loss of heat

49.The overall efficiency of a boiler in a thermal power plant is of the order of _____.

A. 10% B. 25-30% C. 40-50% D. 70-80%
50.Electro static precipitator is installed between _____.

A. Coal banker and boiler B. Boiler furnace and chimney
C. Economizer and air heater D. Condenser and economizer
51.Without Electro static precipitators_____.

A. ID fan rating should be increased B. Economizer rating should be increased
C. Chimney height should be reduced D. None of the above

52.Which of the following equipment is installed to minimize pollution of surroundings?

A. Water treatment plant B. De-super heaters
C. Cooling towers D. Electrostatic precipitators
53.Steam turbines are governed by the following methods.

A. Throttle governing B. Nozzle control governing
C. By-pass governing D. All the above
54.Scrubbers are also called _____.

A. Wet type dust collectors B. Dry type dust collectors
C. Electrostatic precipitators D. Cyclone separators
55.The efficiency of dust collection in wet type dust collector is _____.

A. 40 to 90% B. 50 to 80% C. 20 to 30% D. 60 to 75%
56.A hydroelectric power station is commonly found in _____.

A. Desert areas B. Hilly areas C. Swamps D. Grasslands
57.The largest size hydroelectric unit in India is _____.

A. 350 MW B. 500 MW C. 165 MW D. 90 MW

58.The advantages of hydro plants are:

A. Low operating cost B. They can be started and loaded very quickly
C. They can be used as base load and peak load plants as well D. All of the above
59.Which of the following power plants is free from environmental problems?

A. Diesel engine B. Nuclear C. Hydroelectric D. Steam
60.Which of the following plants will take least time in starting from cold conditions to full load operation?

A. Nuclear power plant B. Steam power plant C. Hydroelectric plant D. Gas turbine plant
61.Which of the following generating plants has the minimum operating cost?

A. Nuclear plant B. Hydroelectric plant C. Steam plant D. Diesel plant
62.Which of the place is not associated with hydro stations?

A. Bhakranangal B. Sileru C. Tarapur D. Nagarjuna
63.In Hydel power plant the area behind the dam is called _____.

A. Catchment area B. Power house C. Surge tank D. Tail race
64.In Hydro power plant the place where the water is started is called _____.

A. Catchment area B. Reservoir C. Power house D. Surge tank
65.Penstock is a _____.

A. Heavy cement pipe B. Heavy steel pipe C. Heavy bronze pipeD. None of the above
66.The flow of water is controlled in _____.

A. Power house B. Valve house C. Surge tank D. Penstocks

67.The sudden water pressures are compensated in _____.

A. Power house B. Valve house C. Surge tank D. Penstocks
68.Hydrograph is plot of discharge of water versus _____.

A. Time B. Velocity of water C. Rate of flow of water D. Head of water
69.In a hydroelectric power plant the path taken from reservoir to valve house is called as _____.

A. Dam B. Penstocks C. Pressure tunnel D. Reservoir
70.The water that comes out of the turbine is called _____.

A. Dust water B. Tail race C. Channel water D. None of the above
71.In high head hydroelectric power plant, the velocity of water flow in penstock is around _____.

A. 2 metres per second B. 4 metres per second C. 7 metres per second D. 10 metres per second
72.For high head and low discharge, the water turbine used is _____.

A. Pelton wheel turbine B. Kaplan turbine C. Francis turbine D. Propeller turbine
73.The power output from a hydroelectric power plant depends on _____.
A. Type of dam, type of catchment area and discharge B. Type of dam, head and system efficiency
C. Discharge, head and system efficiency D. Type of turbine, type of dam and type of catchment area
74.Gross head of a hydroelectric power station is _____.

A. The difference of water level between the level in the storage and tail race
B. The height of water level in the river where the tail race is provided
C. The height of water level in the river where the storage is provided
D. All of the above
75.In a pumped storage Hydel plants water is pumped to _____.

A. Upstream during off peak periods B. Upstream during peak load periods
C. Upstream during base load periods D. None of the above
76.In hydro power stations what is an enlarged body of water just above the intake and used as a regulating reservoir, called?

A. Spillways B. Forebay C. Reservoir D. Penstock
77.Location of a surge tank, in an hydroelectric power station, is near _____.

A. Turbine B. Tail race C. Reservoir D. Dam
78.Turbines installed at Bhakra Nangal are _____.

A. Pelton wheel turbine B. Francis turbine C. Kaplan turbine D. Propeller turbine
79.An impulse turbine _____.

A. Is most suited for low head and high discharge power plants B. Operates by initial complete conversion to kinetic energy
C. Makes use of a draft tube D. Always operates submerged
80.A penstock is used as a conduit between _____.

A. The steam chest and the turbine in a thermal station B. The dam and turbine in a hydro station
C. The turbine and the discharge drain D. The heat exchanger and the turbine in a nuclear power plant
81.The function of a surge tank is to _____.

A. Supply water at constant pressure B. Relieve water hammer pressures in the penstock pipe
C. Produce surge in the pipeline D. None of the above
82.The height of the surge tank is _____.

A. Above the water head B. Below the water head
C. At same height of the water head D. None of the above
83.In hydroelectric power plant, when the water level exceeds the capacity of the dam, the water is released into the river through _____.

A. Surge tank B. Spillways C. Pen stocks D. Valve house
84.The water turbine converts the energy of falling water into _____.

A. Mechanical energy B. Electrical energy C. Steam energy D. Kinetic energy

85.The purpose of providing a trash tracks is to _____.

A. Prevent entry of water into turbine B. Prevent entry of debris into turbine
C. Prevent entry of air into turbine D. None of the above
86.Turbo alternators run at _____.

A. A variable speed around 2000 R.P.M. B. A constant speed of 1000 R.P.M.
C. A constant speed of 3000 R.P.M. D. A variable speed above 1000 R.P.M.
87.The impulse turbine is used for _____.

A. High heads B. Low heads C. Medium heads D. Low and medium heads
88.The reaction turbine is used for _____.

A. High heads B. Low heads C. Medium heads D. Low and medium heads
89.The Kaplan turbine is used for _____.

A. High heads B. Low heads C. Medium heads D. Low and medium heads
90.The Francis turbine is used for _____.

A. High heads B. Low heads C. Medium heads D. Low and medium heads
91.For variable heads of near about, but less than 30 meters, which type of turbines is used in hydro power stations?

A. Pelton B. Kaplan C. Francis D. None of the above
92.In solar power plants, the solar heat is transferred to _____.
A. Molten salts B. Liquid metals C. Water steam D. Any of the above
93.Which of the following area is preferred for solar plants?
A. Coastal areas B. Hot arid zones C. Mountain tops D. High rainfall zones
94.The function of a solar collector is of converting solar energy into _____.

A. Radiations B. Electrical energy directly C. Thermal energy D. Any of the above

95.Reflector mirrors employed for exploiting solar energy are called the _____.

A. Mantle B. Heliostats C. Diffusers D. Ponds
96.A pyrometer can be used for measurement of _____.

A. Diffuse radiations only B. Direct radiations only
C. Both direct and diffuse radiations D. None of the above
97.Temperature attained by cylindrical parabolic collector is of the order of _____.

A. 50-100^{o}C B. 100-150^{o}C C. 150-200^{o}C D. 200-300^{o}C and above
98.The flat plate collector gives a _____.

A. Temperature of about 90^{o}C with an efficiency of 30-35% B. Temperature of about 120^{o}C with an efficiency 45%
C. Temperature of about 150^{o}C with an efficiency 52% D. None of the above
99.In a solar collector, the transparent cover is provided to _____.

A. Protect the collector from dust B. Reduce the heat losses from collector beneath to atmosphere
C. Transmit solar radiation only D. All of the above
100.Solar thermal power generation can be had by using _____.

A. Flat plate collectors B. Focusing or concentrating collectors
C. Solar ponds D. Any of the above
101.Main applications of solar energy may be considered as _____.

A. Direct thermal application B. Fuel from biomass C. Solar electric applications D. All of the above
102.Sun tracking is required in case of _____.

A. Cylindrical parabolic and paraboloid B. Flat plate collector C. Both (A) and (B) D. None of the above
103.The efficiency of solar cell is about _____.

A. 25% B. 15% C. 40% D. 60%
104.Photovoltaic solar energy conversion system makes use of _____.

A. Solar pond B. Fuel cell C. Edison cell D. None of the above

105.Solar cells are made of _____.

A. Aluminium B. Germanium C. Silicon D. Cadmium

106.The output of a solar cell is of the order of _____.

A. 0.5-1 V B. 1-2 V C. 2-3 V D. 4-5 V

107.For satellites, the source of energy is _____.

A. Solar cell B. Fuel cell C. Edison cell D. Cryogenic cell

108.The output wattage of a solar cell is of the order of _____.

A. 0.5 W B. 1.0 W C. 5.0 W D. 10.0 W

109.A module is a _____.

A. Series arrangement of solar cells B. Parallel arrangement of solar cells

C. Series-parallel arrangement of solar cells D. None of the above

110.Solar cells, for power generation have drawbacks of _____.

A. Low efficiency B. Lack of availability

C. High cost and maintenance problems D. All of the above

111.The solar or photovoltaic cell converts _____.

A. Chemical energy into electrical energy B. Solar radiations into electrical energy

C. Solar radiations into thermal energy D. Thermal energy into electrical energy

112.The energy radiated by sun on a bright sunny day is about _____.

A. 2.5 kW/m^2 B. 1.0 kW/m^2 C. 500 W/m^2 D. 200 W/m^2

113.Which of the following power plants is the least reliable?

A. Wind B. Tidal C. Geothermal D. Solar

114.Wind as a source of power _____.

A. Is non-steady and unreliable

B. Does not possess the basic requirements of any energy source

C. Is plentiful, inexhaustible, renewable and non-polluting

D. All of the above

115.Maximum wind energy available is proportional to _____.

A. Air density B. Cube of the wind velocity

C. Square of the rotor diameter D. All of the above

116.The installed capacity of wind energy in India is about_____.

A. 8000 MW B. 1500 MW C. 6000 MW D. 4000 MW

117.Which type of Generator is employed in wind power plant _____.

A. Synchronous generator B. Induction generator

C. Permanent magnet motor D. Brushless motor

118.Which type of wind mills are termed as "cross-wind axis" machines?

A. Horizontal axis wind mill B. Vertical axis wind mill

C. Both (A) and (B) D. None of the above

119.The drawbacks of wind energy is_____.

A. Unreliability an non-steadiness B. Output voltage and frequency fluctuation
C. Can affect the bird life D. All the above
120.Winds having following speed are suitable to operate wind turbines.

A. 5 – 25m/s B. 10 – 35m/s C. 20 – 45m/s D. 30 – 55m/s
121.Wind energy is harnessed as _____ energy with the help of windmill or turbine.

A. Mechanical B. Solar C. Electrical D. Heat
122.Local winds are caused by_____.

A. differential heating of land and water B. differential heating of plains and mountains
C. Any of the above D. None of the above
123.A tidal power plant is installed in India near _____.

A. Bay of Bengal B. Visakhapatnam C. Goa D. Gulf of Cambay
124.The turbine normally employed in tidal power plants is _____.

A. Simple impulse type B. Propeller type C. Reaction type D. Reversible type
125.Tidal energy utilizes _____.

A. Kinetic energy of water B. Potential energy of water
C. Both potential as well as kinetic energy of water D. None of the above
126.Tidal power schemes could not be found economically justified because of _____.

A. High cost of civil engineering works B. Non availability of tidal energy in India
C. Both (A) and (B) D. None of the above
127.Which of the following methods, generating electric power from the sea water is more advantageous?

A. Ocean currents B. Wave power C. Tidal power D. None of the above
128.Difference in levels of ocean water between a high tide and low tide is called _____.

A. Tidal average B. Tide range C. Neap tide D. Spring tide
129.Ebb current is_____.

A. The same as eddy current
B. The movement of the tidal current away from shore or down a tidal stream
C. The removal by screen of undesirable fine materials
D. None of the above
130.The main sources of production of biogas are_____.

A. Wet cow dung B. Human waste C. Wet livestock waste D. All of the above
131.Biogas consists _____.

A. Only methane B. Methane and carbon dioxide with some impurities
C. Only ethane D. A special organic gas
132.Biogas plants are suitable for _____.

A. Metallurgical industries B. Commercial complexes C. Rural areas D. Coal mines
133.The main by-product of the biogas plant is _____.

A. Biomass B. Biogas C. Organic manure D. None of the above
134.Which of the following is a renewable sources of energy?

A. Uranium B. Petroleum C. Coal D. Biomass
135.For transmission of electrical energy, usually the system used is _____.

A. Overhead system B. Underground cable system C. Both (A) and (B) D. None of the above

136.The conveyance of electrical power from power station to consumer's premises is called _____.
A. Transmission system B. Distribution system C. Supply system D. None of the above
137.For transmission of electrical energy the voltage preferable is _____.

A. High voltage B. Medium voltage C. Low voltage D. None of these
138.The transfer of electrical energy from generating station to the outskirts of the city is called _____.
A. Primary transmission B. Primary distribution
C. Secondary transmission D. Secondary distribution
139.The transfer of electrical energy from outskirts of the city to the substations is called _____.
A. Primary transmission B. Primary distribution C. Secondary transmission D. Secondary distribution
140.In secondary distribution, the supply is transferred by _____.
A. 3 phase, 3 wire system B. 3 phase, 4 wire system
C. 1 phase, 2 wire system D. 1 phase, 3 wire system
141.Compared to AC, DC transmission requires _____.
A. Less copper B. More copper C. Same copper D. None of these
142.Compared to AC, the voltage regulation in DC transmission is _____.

A. High B. Low C. Same D. None of these
143.Compared to AC, the line drop in DC transmission is _____.
A. High B. Low C. Same D. None of these
144.Skin effect is less in _____.

A. DC transmission B. AC transmission C. DC and AC transmission D. None of the above
145.Compared to AC, the corona loss in DC transmission is _____.
A. Less B. More C. Same D. None of these
146.In AC transmission, low frequency is preferable to _____.
A. Reduce skin effect B. Reduce corona effect
C. Reduce dielectric loss D. All of the above
147.Which transmission system, will affect the communication system more _____.
A. AC transmission B. DC transmission C. Both AC and DC transmission D. None of the above
148.Compared to DC, the insulation required for AC transmission is _____.
A. Less B. More C. Same D. None of these
149.The skin effect will _____.

A. Increase the power loss B. Decrease the power loss C. Independent of the power loss
D. None of the above
150.The transmission lines and distribution lines are discriminated by _____.
A. The size of conductor B. Power transfer C. The operating voltage D. Operating current
151.Which one of the following transmission is more efficient?
A. Low voltage AC transmission B. Low voltage DC transmission
C. High voltage DC transmission D. High voltage AC transmission

152.For economical proposition, the transmission of electrical energy is by _____.

A. 3 phase, 4 wire system B. 3 phase, 3 wire system
C. 3 phase, 1 wire system D. 3 phase, 2 wire system
153.The total annual cost depends on conductor _____.

A. Resistance B. Reactance C. Surface area D. Cross sectional area
154.The capital cost of the transmission includes _____.

A. Cost of conductor B. Cost of insulator C. Cost of support D. All of the above
155.If the transmission voltage is increased, the overall cost of transmission _____.
A. Increases B. Decreases C. Remains the same D. None of the above
156.For high voltage transmission _____.

A. Volume of conductor required is less B. Transmission efficiency increase
C. Line drop will decrease D. All of the above

157.Overhead transmission system is also called _____.

A. Open wire system B. Closed wire system C. Underground system D. None of the above
158.Open wire system is generally used for _____.

A. Low frequencies B. Medium frequencies
C. Both low and medium frequencies D. High frequencies
159.The depth of a pole below the ground level in case of normal soil should be_____.
A. $1/4^{th}$ of its full height B. $1/5^{th}$ of its full height C. $1/6^{th}$ of its full height D. $1/8^{th}$ of its full height
160.While using wooden poles in a service line, the span should not exceed_____.
A. 100 to 300 m B. 60 to 100 m C. 50 to 80 m D. 40 to 50 m
161.In a service line of a residential colony which type of poles are preferred?

A. Wooden B. Steel tubular C. R.C.C. D. Steel tower

162.If a distribution line and street lighting fixtures are installed on the same pole then their span should not exceed_____.
A. 30 m B. 45 m C. 60 m D. 100 m
163.The general voltage limits for medium transmission lines in kV is_____.

A. 20 to 50 B. 20 to 100 C. 10 to 50 D. 10 to 150
164.The general distance, for medium transmission line in km is _____.

A. 20 to 100 B. 50 to 150 C. 20 to 150 D. 10 to 150
165.Which type of insulator is used in stay wire?
A. Pin type B. Egg type C. Shackle type D. Suspension type

166.The usual spans with R.C.C. poles are _____.

A. 40 to 50 m B. 60 to 100 m C. 80 to 100 m D. 300 to 500 m
167.In transmission lines the cross-arms are made of _____.

A. Copper B. Wood C. R.C.C. D. Steel
168.For high voltage transmission lines, why are conductors suspended from towers?
A. Increase the clearance from ground. B. Reduce clearance from ground.
C. Take care of increase in length. D. Reduce the environmental effects.
169.In India, which types of poles are commonly used for distribution?
A. Wooden poles B. RCC poles C. Steel poles D. Both (B) and (C)
170.Which among these is not a type of steel poles?

A. Rail poles B. Tubular poles C. Rolled steel joints D. None of these
171.What is the main purpose for guy wire?

A. Supports the pole B. Protects against the surges
C. Provides emergency earth route D. All of these
172.Wooden poles for supporting transmission lines are used for voltages up to_____.

A. 440 V B. 11 Kv C. 22 kV D. 66 kV
173.Between two supports, due to sag the conductor takes the form of_____.

A. Catenary B. Triangle C. Ellipse D. Semi-circle
174.The choice of economic span length depends on _____.

A. Size of conductor B. Material of conductor C. No. of conductor D. All of the above
175.For the long transmission lines the minimum line voltage in kV and distance in km are respectively_____.
A. 20; 50 B. 50;20 C. 150;100 D. 100;240

176.Transmission line insulators are made of _____

A. Glass B. Porcelain C. Iron D. PVC
177.The conductor of the overhead lines are_____.

A. Solid B. Stranded C. Both solid and stranded D. None of the above
178.Pin type insulators are provided with petticoats_____.

A. For good appearance B. To increase the leakage path
C. Protection against rain D. For mechanical strength
179.Strain insulators are used in _____plane.

A. Cross arm B. Conductor C. Insulator D. Support
180.Hollow conductor are used in transmission lines to _____.

A. Reduce weight of copper B. Improve stability
C. Reduce corona D. Increase power transmission capacity
181.Pin type insulators are generally not used for voltage beyond _____.

A. 1 kV B. 11 kV C. 22 kV D. 33 kV
182.Which type of insulator is used on 132 kV transmission lines?

A. Pin type B. Disc type C. Shackle type D. Pin and shackle type
183.What is the dielectric strength of porcelain?

A. 55 kV/cm B. 60 kV/cm C. 75 kV/cm D. 80 kV/cm
184.What is the safety factor of an insulator?

A. Puncture strength × Flash over voltage B. Puncture strength / Flash over voltage
C. Flash over voltage / Puncture strength D. Puncture strength / Current
185.Which insulator is also called as spool type of insulators?

A. Pin type B. Shackle type C. Suspension type D. Stay insulators

186.Which type of insulators is used in guy wires?

A. Stay insulators B. Shackle insulators C. Pin type D. Strain type
187.Where is the suspension type of insulators mainly used?

A. RCC poles B. Wooden poles C. Steel poles D. Steel towers

188.In a transmission line the insulators to be used at the dead end or sharp curves are_____.

A. Pin type insulator B. Strain type C. Suspension type D. Shackle type

189.Suspension type insulators are used for voltage beyond_____.

A. 230 V B. 440 V C. 11 kV D. 33 kV

190.ACSR is used in place of copper in overhead line because of_____.

A. Higher current carrying capacity B. Being lighter in weight
C. Economy D. Higher tensile strength

191.ACSR conductors have_____.

A. All conductors made of aluminium B. Outer conductors made of aluminium
C. Inner conductors made of aluminium D. No conductors made of aluminium

192.The number of strands in a stranded conductor can be determined by _____.

A. N = 3n(n+1)+1 B. N = 3n+1 C. N = 2n(n+1)+1 D. N = 4n(n+1)+1

193.The total diameter of stranded conductor can be determined by_____.

A. D = (3n+1)d B. D = (2n+1)d C. D = (4n+1)d D. D = (5n+1)d

194.Hewlett and cemented cap type insulators are_____.

A. Suspension insulators B. Pin type insulator C. Shackle type insulator D. Shackle type insulator

195.The requirement of insulators are _____

A. Mechanically strong B. High dielectric strength C. Should not be porous D. All the above

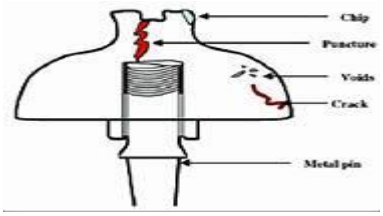
196. Transmission line string insulator are mainly made of ----------

A. Glass B. Porceline C. Iron D. P.V.C

197. For which among the following the current rating are not required ?

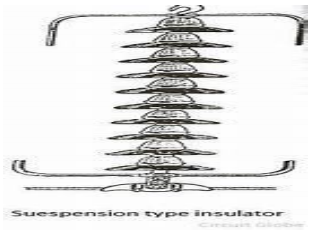
A. Circuit Breaker B. Relays C. isolator D. Load break switch.

198. What is the name of the insulator? |



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

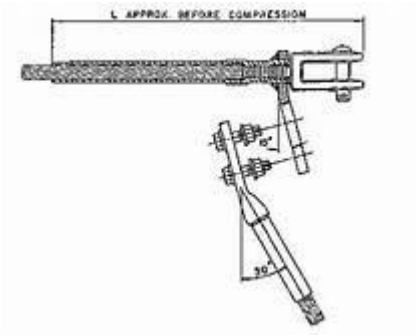
199. What is the name of line insulator?



A Pin type insulator | B Disc type insulator

C Shackle type insulator | D Suspension type insulator

200. 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

201 Corona is accompanied by

A. Violet visible discharge in darkness B. Hissing sound and power loss

C. Vibration and Radio interference. D.All of the above.

202 Which of the following statement is true regarding corona

A. Corona takes place at a voltage lower than breakdown voltage.
B. Corona takes place at a voltage higher than breakdown voltage.
C. Corona is a current phenomenon
D. Corona increase the transmission line efficiency.

203 The current by the line owing to corona los is

A. Non sinusoidal B. Sinusoidal C. D.C D. Square

204 To reduce corona effect ,usually

A. The distance between the conductor is reduce
B. The conductor diameter are reduced.
C. Bundle conductor are used.
D. Stranded conductor are used.

205 Corona loss can be reduced by the use of hollow conductor because.

A. The current density is reduce.
B. The eddy current in the conductor is eliminated
C. For a given cross section the radius of the conductor is increased.
D. Of better ventilation in the conductor.

206 Corona loss in a transmission line is dependent on

A. Diameter of the conductor B. Material of the conductor.
B. C .Height of the conductor D. None of the above.

207 In context of corona, with smooth and polished conductors

A. There will be no corona glow.
B. Corona glow will be uniform along the length of the conductor.
C. There will be minimum power loss
D. Hissing sound will be more intense.

208 In the statement corona , which statement is not true?

A. Corona is voltage effect
B. Corona takes place in a short transmission line
C. Corona is accompanied with power loss

D. Corona attenuates lightning surge.

209 Corona occurs between two transmission conductor when

A. They have high potential difference B. They are closely spaced.

B. They carry D.C power D. Both A and B

210 Corona can be reduced by

A. Increasing the operating voltage

B. Reducing the spacing between conductors

C. Increase the effective conductor diameter

D. Any of the above.

211 Which of the following affects make corona the least.

A. Mean free length B. Atmospheric temp. C. Number of ions D.Size and charge per ion

212 The effect of corona is

A. Increase inductance B. Increase reactance C. Increase power loss D. All of the above.

213 The chances of occurrence of the corona are maximum during

A. Humid weather B. Dry weather C. Winter D. Hot summer

214 The only advantage of corona is that it.

A. Produces a pleasing luminous glow B. Makes line current sinusoidal

B. Works as safety valve for surges. D. Ozone gas is produce..

215 Corona likely to occur maximum in case of

A. Distribution line B. Transmission lines C. Domestic wiring D. Service mains

216 Presence of ozone owing to corona

A .improve the power factor B. reduce the power factor

C. Corrodes the material D. improves regulation.

217. Corona usually occurs when the electrostatic stress in the air around the conductor exceed maximum of

A. 40 Kv per cm B. 30 Kv per Cm C. 22 KV per cm D. 6.6 Kv per cm

218. Power loss due to corona is directly proportional to

A. Spacing between conductors B. Radios of the conductor

C. Supply Frequency D. None of the above.

219. The Critical value of surge impedance of the long transmission line is.

A. 1000ohm B. 400 ohm C. 250 ohm D. 50 ohm

220. Skin effect exists in…….

A. cable carrying DC Current B. DC transmission line only

C. AC transmission line only D. DC as well as AC transmission line

221. Skin effect depends upon

A. Cross section of the conductor B. Supply frequency

C. permeability of the conductor material D. All of the above.

222. Skin effect in transmission line is due to

A. supply frequency B. Self inductance of the conductor

C. high sensitivity of the material in the centre D. both A and B

223. Calculate the diversity factor is ----------

A. Diversity factor = Minimum actual load Installed load

B. Diversity Factor = Installed load Minimum actual load

C. Diversity factor = Installed load+ Minimum actual load

D. Diversity Factor= Installed load x Minimum actual load

224. Location of Lighting arrester is near a……..

A. generator B. Transformer C. Bus Bar D. Circuit breaker

225. The Protecting Device against lightening over voltage is ……

A. Rod Gaps B. Surge Absorber C. Horn Gap D. All of the above.

226. In order to improve the power factor ___ device is employed in the substation

A. Synchronous condenser B. Synchronous reactor C. Series Capacitors D. None of the above

227. What is the minimum phase to phase clearance required for 400kV conductors in substation?

A. 3500 mm B. 4200 mm C. 5000 mm D. 4500 mm

228. In substation which of the device is a carrier communication device:

A. CVT B. Earth conductor C. Wave trap D. Lightning arrestor

229. Which of the device is employed in substation to limit the short circuit current in the power system?

A. Shunt condenser B. Reactor C. Series capacitor D. Shunt capacitor

230. Which of the following bus bar arrangement is generally employed in distribution system?

A. One-and-half breaker arrangement B. Main and transfer arrangement

C. Ring main distribution system D. Single bus bar arrangement system

231. Earthing conductivity is affected by

A. Moisture content in the soil B. Chemical composition

C. Concentration of salts in the soil D. All the above

232. Emulsifier protection is associated with

A. Grounding protection B. Dielectric strength protection of cables and conductors

C. Lightning protection D. Fire protection

233. The size of Gas Insulated Substation is significantly small compared to conventional substation because of

A. High electronegative property of SF6 gas B. High dielectric property of SF6 gas

C. High Insulation property of SF6 gas D. All the above

234. Which among these is a type of surge arrestor?

A. Conventional gapped arrestor B. Metal oxide arrestors C. Both (A) and (B) D. None of these

235. Which is the first equipment seen in the substation while coming from transmission system?

A. Circuit breaker B. Lightning arrester C. Current transformer D. Transformer

236.Gas Insulated Substation is employed

A. Where there is less space available B. For high altitude substations

C. In terrain region D. All the above

237. A bus coupler circuit breaker is utilized in a substation for

A. Joining the transmission line with station bus-bar B. Joining main and transfer bus in a substation

C. Joining the generator with transfer D. Joining the neutral of the generator with earth

238.Which of the gas is used in gas insulated substation?

A. Nitrogen + SF6 B. Hydrogen + SF6 C. SF6 D. None of the above

239.Which of the following bus-bars arrangement is more reliable and flexible?

A. Main and transfer bus scheme B. One-and-half breaker scheme

C. Double main bus bar scheme D. Single bus bar scheme

240.What is the maximum transmission voltage substation in India?

A. 400 Kv B. 500 kV C. 750 kV D. 1000 kV

241.A bus bar is rated by

A. Current only B. Voltage only
C. Current, voltage and frequency D. Current, voltage, frequency and short circuit current

242.In a substation current transformers are used for

A. Measuring purpose B. Protection purpose connecting to relays
C. Both (A) and (B) D. None of the above

243.Step potential and Touch potential is associated with

A. High voltage transmission B. Earthing of the substation
C. Voltage rise in the substation D. Communication system

244.It is the minimum clearance required between the live conductors and maintenance operators limit

A. Ground clearance B. Phase clearance C. Sectional clearance D. None of the above

245.Disc type insulators are used for voltage beyond

A. 11 kV B. 33 kV C. 66 kV D. 132 kV

246.What does section 44 refer to?

A. Penalty for interference with meters B. Penalty for illegal transmission or use of energy
C. Penalty for maliciously wasting energy D. Theft of energy

ANSWER KEY

GENERATION TRANSMISSION AND DISTIBUTION SYSTEM

1-A 2-B 3-D 4-A 5-D 6-B 7-A 8- B 9-A 10-A 11-D 12-A 13-B 14- B 15-B 16-C 17-B 18-A 19-B 20-B 21-C 22-B 23-A 24-A 25-B 26-D 27-C 28-B 29-D 30-D 31-A 32- A 33-D 34-B 35-C 36-D 37-B 38-D 39-B 40-B 41-A 42-D 43- B 44-D 45-A 46-D 47-A 48-B 49- D 50- B 51- A 52- D 53- D 54- A 55- D 56- B 57- C 58- D 59- C 60- C 61- B 62- C 63- A 64- B 65- B 66- B 67- C 68- A 69- C 70- C 71- C 72- A 73- C 74- A 75- A 76- B 77- A 78- A 79- B 80- B 81- B 82- B 83 A 84-A 85- B 86- C 87- A 88- D 89- B 90- C 91- B 92- D 93- B 94- C 95- B 96-C 97- D 98- A 99-D 100- D 101-D 102- A 103-B 104-A 105-C 106-A 107-A 108-B 109-C 110- C 111-B 112-B 113-A 114-B 115-D 116-A 117-B 118-B 119-D 120-A 121-A 122-C 123-D 124-D 125-B 126- A 127-C 128-B 129-B 130-D 131-B 132- C 133-C 134- D 135- C 136- C 137- A 138- A 139- C 140- B 141- A 142- B 143- B 144-A 145- A 146- D 147- A 148- C 149-A 150- C 151- C 152- B 153-D 154- D 155-D 156-D 157- A 158-A 159-C 160- D 161-C 162- B 163- B 164- B 165- B 166- C 167- D 168- A 169- D 170- D 171- A 172- C 173- A 174- D 175- D 176- B 177- B 178- B 179- A 180- C 181- D 182- B 183- B 184- B 185- B 186- A 1867- D 188- B 189- D 190-C 191- B 192- A 193-B 194- A 195- B 196- B 197- C 198- D 199-D 200-C 201-D -202-A -203-A -204- C -205-C -206- A -207- B -208- B -209- D -210- C -211- B -212- C 213- A 214- C 215- B 216- C 217- B 218- C 219- B 220- C 221- D 2 22- D 223- A 224- B 225- D 226- A 227- B 228- C 229- B 230- C 231- D 232- D 233- D 234- C 235- B 236- A 237- C 238- C 239- B 240- C 241- D 242- C 243- B 244- C 245- B 246- A

RELAY AND CIRCUIT BREAKERS

1.What is the purpose of back up protection?

A. To increase the speed B. To increase the reach
C. To leave no blind spot D. To guard against failure of primary

2.What is the actuating quantity for the relays?

A. Magnitude B. Frequency C. Phase angle D. All of these

3.Which component ensures the safety of the line from damage

A. Relay B. Circuit breaker C. Bus bar D. Current transformer

4.The tripping circuit is_____

A. AC B. DC C. Either AC or DC D. None of these

5.An impedance relay is used for

A. Earth faults B. Inter phase faults C. Both (A) and (B) D. None of these

6.Relay gets its operating energy from

A. Transformer B. Alternator C. Overhead lines D. C.T., P.T.

7.Percentage differential protection is used to prevent against

A. Inter-turn faults B. Heavy Loads C. External Faults D. Magnetizing current

8.Back up protection is needed for

A. Over voltage B. Short circuits C. Over current D. All of these

9.An instantaneous relay is

A. Permanent moving magnet B. Induction cup C. Shaded pole D. Moving coil

10.Relays for transmission line protection are

A. In three zones B. In two zones C. Independent of zone D. None of these

11.Induction cup relays responds to

A. Current B. Power C. Voltage D. Impedance

12.Ionization in circuit breakers is facilitated by

A. Increase of field strength B. Increase of mean free path
C. High temperature D. All of these

13.Arc interruption is done by

A. High resistance interruption B. Low resistance interruption
C. Both (A) and (B) D. None of these

14.Part of circuit breaker helpful in breaking the current is

A. Trip Coil B. Contacts C. Handle D. Medium

15.Desired tripping of a circuit breaker is

A. Manually B. Automatically C. That it should give warning D. None of these

16.Arcing time is the time between

A. Separation of circuit breaker and extinction of arc B. Separation of circuit breaker and rise of recovery voltage
C. Normal current interruption and arc extinction D. None of these

17.For single frequency transients, ratio of peak restriking voltage to time between voltage zero and peak voltage is called

A. Restriking voltage B. Recovery voltage
C. Rate of rise restriking voltage D. Active recovery voltage
18.Time between energization of trip coil and separation of contacts is called

A. Closing time B. Opening time C. Both (A) and (B) D. None of these
19.In circuit breaker, to facilitate arc quenching, dielectric strength can be increased by

A. Lengthening of the gap B. Cooling C. Blast effect D. All of these
20.Rate of rise restriking voltage depends upon

A. Active recovery voltage B. Natural frequency of oscillations
C. Both (A) and (B) D. Rating of circuit breaker
21.An ideal circuit breaker should offer

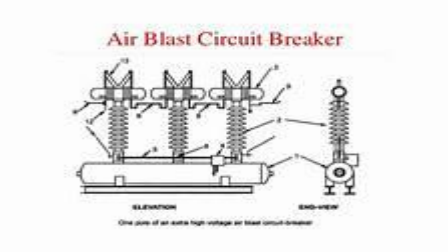
A. Zero & infinite impedance before & after interruption respectively B. Infinity & zero impedance before & after interruption respectively
C. Equal impedance before & after interruption D. None of these
22. Which circuit breaker is installed along with wiring circuit against leakage current protection?

A .OCB B. MCB C. ELCB D. MCCB

23. Which relay hold their contacts in position after power is cutoff?

A .Read relay| B . Current relay | C . Voltage relay | D . Latching relay

24. What is the name of circuit breaker?



A Oil circuit breaker | B Air blast circuit breaker

c. Vacuum circuit breaker | D Air break circuit breaker

25. How the rupturing capacity of circuit breaker is rated? |

A KV B KW C MVA D KVAR

26. What is the pick-up voltage in a over voltage relay indicated?

A Working voltage of relay | B Maximum voltage rating of relay |

C Minimum voltage rating of relay | D Minimum voltage to start the relay

27. What is the function of Buchholz relay in power transformer? |

A Over load and short circuit protection | B Over voltage and earth fault protection |

C Open circuit and earth fault protection | D Open circuit and over voltage protection |

28. In Which of the following device the load is protected by G' series MCB ?|

A Ovens | B Geysers |

C Air conditioners D General lighting systems |

29. Which type of relay is used in both A.C and D.C supply? |

A Reed relay | B Impulse relay |

C Thermal relay | D Clapper-type armature relay |

30. Which circuit breaker is used as a switch and protective device in the domestic wiring circuit?

A Air circuit breaker | B Miniature circuit breaker |

C Moulded case circuit breaker | D Earth Leakage circuit breaker

31. What is the purpose of trip coil used in circuit breakers? |

A Easy operation | B Remote operation

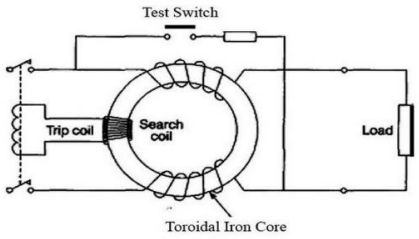
C Accurate operation | D Emergency operation |

32. What is the function of relay to the breaking operation of circuit breaker in control circuit

A Sensing the fault quantities | B Analyzing the condition of breaker |

C Controlling the Speed in case of fault | D Interpreting the fault situation to operate breaker |

33. What is the effect, if the test button marked as X' is closed permanently in ELCB?



A Circuit trips intermittently | B Circuit functions normally |

C Circuit switch off completely | D Circuit will not trip on leakage |

34. What is the defect in an air circuit breaker, if trips intermittently on loading?

A Incorrect setting of relay B Excessive heat

C Insufficient air pressure | D Line voltage is too high

35. What is the defect in a oil circuit breaker if the oil heats up excessively? |

A Line voltage is too high | B Excessive load

C Poor dielectric strength | D Defective tripping mechanism

36. What is the cause for the defect if phase to ground fault on the transmission line?

A Components failure | B Insulation failure | C Human error | D Fuse failure |

ANSWER KEY- RELAY AND CIRCUIT BREAKERS

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