Wireman – Semester 3 Module 1 - Electronic Components

Reviewed and updated on: 01st November 2019 Version 1.1

1 : What is the name of maximum reverse voltage the diode can with stand?
A : Knee voltage
B : Barrier voltage
C : Peak inverse voltage
D : Cut in voltage

---

2 : What is the barrier potential for silicon diode?
A : 0.9V
B : 0.3V
C : 0.7V
D : 0.6V

---

3 : Identify the component symbol represents?

A : Diode
B : Diac
C : LED
D : Zener diode

---

4 : What is the application of zener diode?
A : Voltage regulator
B : Rectifier
C : Amplification
D : Oscillation

---

5 : How many terminals are in transistor?
A : 2
B : 3
C : 4
D : 5

---

6 : Which is the current amplification factor in common base configuration?
A : Alpha (α)
B : Beta (β)
C : Gamma (ɣ)
D : Delta (Δ)

---

7 : Which region emitter and collector junctions are reverse biased?
A : Safuration region
B : Cut off region
C : Active region
D : Breakdown region

---

8 : How many semi conducting layers are present in SCR?
A : Two
B : Three
C : Four
D : Five

---

9 : What are the name of the terminals in UJT?
A : Base 1, Base 2, gate
B : Anode, Cathode, gate
C : Base 1, Base 2, Emitter
D : Emitter base, collector

---

10 : Which current is required to turn ON SCR from OFF state to ON state?
A : Holding current
B : Latching current
C : Reverse blocking current
D : Forward blocking current

---

11 : Which is the control terminal of SCR?
A : Gate
B : Cathode
C : Anode
D : Base

---

12 : How many terminals are in fixed voltage regulator IC?
A : 3
B : 4
C : 5
D : 6

---

13 : How the size of integrated circuits (IC) compared with discrete circuit?
A : Large
B : Small
C : Similar
D : Very large

---

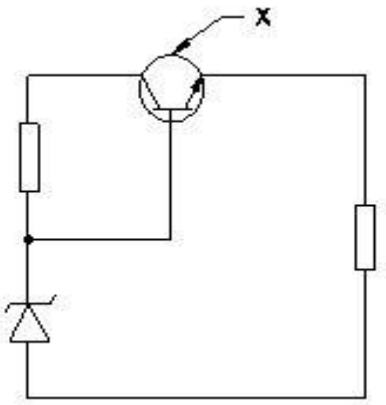
14 : What does 05 indicates in IC 7805?
A : Positive output current
B : -5V
C : +5V
D : Negative output current

---

15 : What is the application of 7805 IC?
A : Clipping
B : Clamping
C : Oscillator
D : Voltage regulator

---

16 : What is the name of component marked as X in voltage regulator?



A : Zener diode
B : Diode
C : Transistor
D : Diac

---

17 : Which is the high power passive component in D.C. power supply?
A : Transistors
B : Diodes
C : IC
D : Resistors

---

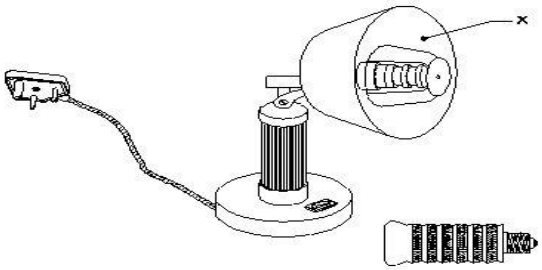
18 : Which is the second stage of a DC power supply?
A : Voltage transformation
B : Filtering
C : Rectification
D : Input supply

---

19 : Which material is used for heating coil of electric heater?
A : Copper
B : Nichrome
C : Silver
D : Brass

---

20 : What is the part marked as X?



A : Bowl reflector
B : Heating element
C : Insulator
D : Switch

---

21 : How many number of pins are in the chord wire of automatic electric iron?
A : 1
B : 2
C : 3
D : 4

---

22 : Which is the additional part used in automatic iron compared to non automatic iron?
A : Heal plate
B : Pressure plate
C : Chord wire
D : Thermostat

---

23 : What is the function of thermostat in automatic electric iron?
A : To control the temperature
B : To transfer heat
C : To fix the element
D : To hold electric iron

---

24 : What is the range of speed in a food mixer?
A : 300-600rpm
B : 550-900rpm
C : 1000-2000rpm
D : 3000-14000rpm

---

25 : What is the minimum value of insulation resistance of chord wire in a food mixer?
A : 1 mega ohm
B : 500 ohm
C : 100 mega ohm
D : 1 ohm

---

26 : What is the function of rotary switch in food mixer?
A : Over load protection
B : To reverse rotation
C : Over current Protection
D : Speed selection

---

27 : How many windings are in a ceiling fan?
A : 4
B : 3
C : 2
D : 1

---

28 : Which type of bearing is used in table fan?
A : Sleeve bearings
B : Ball bearings
C : Roller bearings
D : Needle bearings

---

29 : Which type of motor is used in ceiling fan?
A : Permanent capacitor motor
B : Capacitor start induction run motor
C : Universal motor
D : Repulsion motor

---

30 : Which washing machine, water is propelled up wards?
A : Agitator wash
B : Pulsator wash
C : Air power wash
D : Chaos punch wash

---

31 : Which type of washing machine is fitted with concave shaped disc?
A : Air wash
B : Agitator wash
C : Pulsator wash
D : Chaos punch wash

---

32 : Which electrical effect gang type electric bell works?
A : Heating effect
B : Magnetic effect
C : Chemical effect
D : X ray effect

---

33 : Which device is used in annunciator panel?
A : Buzzer
B : LED
C : Hooter
D : Loud speaker

34 : What is the working principle of DC generator?
A : Amperes law
B : Faradays law of electro magnetic induction
C : Faradays law of electrolysis
D : Lenzs law

---

35 : What type of Emf is induced in DC generator?
A : Dynamically induced
B : Statically induced
C : Self induced
D : Mutually induced

---

36 : What rule is used to find the direction of induced emf in DC generator?
A : End rule
B : Flemings right hand rule
C : Cork screw rule
D : Flemings left hand rule

---

37 : Which generator the field winding is connected across the armature?
A : Series generator
B : Pulse generator
C : Magneto generator
D : Shunt generator

---

38 : Which type of DC generator can be called as a constant voltage generator?
A : Series generator
B : Shunt generator
C : Differential compound generator
D : Under compound generator

---

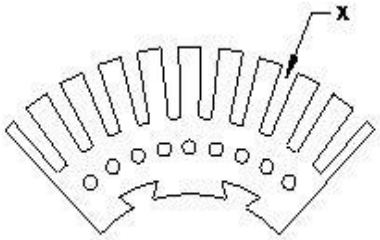
39 : Which part of a DC generator is laminated?
A : Winding
B : Shaft
C : Armature core
D : Yoke

---

40 : Which material is used for commutator segment?
A : Copper
B : Hard-drawn copper
C : Carbon
D : Brass

---

41 : Identify the part marked as X in figure?



A : Teeth
B : Slot
C : Key way
D : Air duct

---

42 : What is the function of commutator in DC generator?
A : To convert AC to DC
B : To convert DC to AC
C : To rotate the armature
D : To collect current

---

43 : Where the brushes are housed in DC generator?
A : Yoke
B : Terminal box
C : Shaft
D : Brush holder

---

44 : Which part of the DC generator helps to spread out field flux in the air gap?
A : Pole shoes
B : Yoke
C : Armature
D : Commutator

---

45 : What is indicated by letter N in this formula?

$$E = \frac{\varphi Z N}{60} \times \frac{P}{A} \text{ Volts}$$

A : Number of conductor
B : Speed in rpm
C : Number of parallel path
D : Number of poles

---

46 : Which is the formula of emf equation in wave wound DC generator?

A :

$$E = \frac{\varphi ZN}{60} \times \frac{P}{2} \text{Volts}$$

B :

$$E = \frac{\varphi ZA}{60} \times \frac{P}{N} \text{Volts}$$

C :

$$E = \frac{AZN}{60} \times \frac{P}{\varphi} \text{Volts}$$

D :

$$E - \frac{\varphi PN}{60} \times \frac{P}{A} \text{Volts}$$

---

47 : What will happen, if shunt field resistance is too large?

A : Fails to build up voltage
B : Build up voltage
C : Generator doesnt run
D : Voltage increases

---

48 : Which determines the polarity of induced emf in DC shunt generator?

A : Number of conductor
B : Number of parallel path
C : Direction of rotation of armature
D : Number of field poles

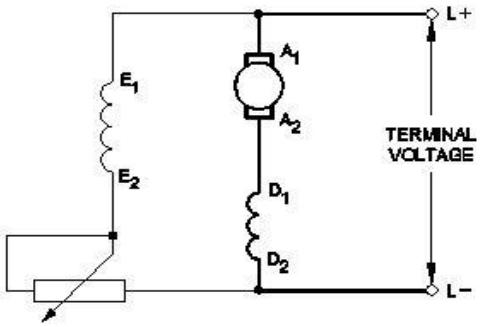
---

49 : Which type of DC generator is used as booster generator?

A : Series generator
B : Separately exited generator
C : Shunt generator
D : Compound generator

---

50 : Which type of compound generator is illustrated?



A : Short shunt compound generator
B : Long shunt compound generator
C : Differential compound generator
D : Separately excited generator

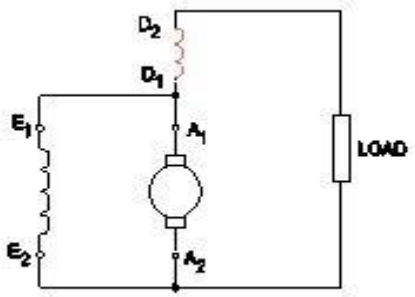
---

51 : Which generator has both shunt and series field winding?

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

---

52 : What is the name of DC generator?



A : Short shunt compound generator
B : Long shunt compound generator
C : Differential compound generator
D : Shunt generator

---

53 : Which generator, shunt field flux is opposed by series field flux?

A : Differential compound generator
B : Cumulative compound generator
C : Shunt generator
D : Series generator

---

54 : Which DC compound generator the shunt field is connected in parallel to armature only?
A : Shunt generator
B : Short shunt generator
C : Series generator
D : Long shunt generator

---

55 : What is the function of series field winding in cumulative compound generator?
A : To oppose the shunt field
B : To oppose main field
C : To assist the shunt field
D : To oppose armature

---

56 : What is the full form of TPT?
A : Trailing Pole Tip
B : Temporary Pole Tip
C : Topmost Pole Tip
D : Temporary Present Tip

---

57 : What is the full form of GNA?
A : General Neutral Axis
B : Geometrical Neutral Axis
C : Geographical Neutral Axis
D : Geometrical Numerical Axis

---

58 : How the effect of cross magerising effect is nullified?
A : By changing commutator
B : By reversing direction
C : By shifting the brush position
D : By changing armature

---

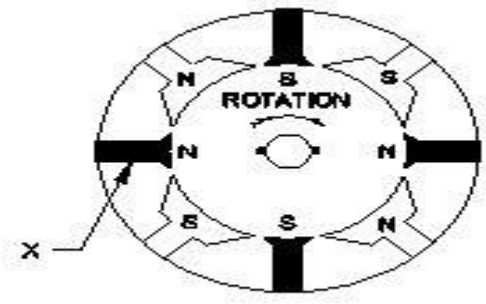
59 : What is the function of compensating winding in DC machine?
A : Reduce armature reaction
B : To produce flux
C : To reduce humming
D : To reduce friction

---

60 : What is the function of interpole in DC machine?
A : To reduce humming
B : To improve commutation
C : To reduce magnetic locking
D : To reduce vibration

---

61 : What is the name of part marked as X?



A : Main pole
B : Interpole
C : Compensating winding
D : Pole shoe

---

62 : What is the full form of MNA?
A : Micro Neutral Axis
B : Minimum Neutral Axis
C : Miniature Neutral Axis
D : Magnetic Neutral Axis

---

63 : How the compensating winding is connected with the armature of DC machine?
A : Series
B : Parallel
C : Series - Parallel
D : Between armature and field

---

64 : How the inter poles are connected to the armature of a DC machine
A : Parallel
B : Series
C : Series - Parallel
D : Between armature and field

---

65 : What is the effect of rough commutation in DC generators?
A : Heavy sparking in the brushes
B : Terminal voltage reduces to zero
C : Voltage drop at brushes increases
D : Terminal voltage reduces considerably

---

66 : Which generator has very high value of voltage regulation?
A : Shunt generator
B : Compound generator
C : Series generator
D : Magneto generator

---

67 : Which of the following is the voltage equation for DC series generator?
A :
$E_g = V - I_a R_a$
B :
$E_g = V + I_a R_a$
C :
$E_g = V + I_a (R_a + R_{se})$
D :
$E_g = V + I_a R_{se}$

---

68 : Which type of DC generator is used for welding purpose?
A : Differential compound generator
B : Cumulative compound generator
C : Shunt generator
D : Series generator

---

69 : Which type of DC generator is used for centrifugal pump?
A : Series generator
B : Shunt generator
C : Differential compound generator
D : Under compound generator

---

70 : Which type of DC compound generator is used for light and power load?
A : Flat compound
B : Under compound
C : Differential compound
D : Differential long shunt generator

---

71 : Which of the following generator does not build up voltage if load is not connected?
A : Series generator
B : Shunt generator
C : Long shunt compound generator
D : Short shunt compound generator

---

72 : What is the condition of voltage while operating DC generators in parallel?
A : Must be more
B : Above 250V
C : Must be the same
D : Must be less

---

73 : Where the positive terminal of the generator is connected while parallel operation?
A : -ve bus bar
B : Neutral point
C : +ve bus bar
D : Phase wire

---

74 : How load is shifted from one generator to other when DC generators are operating in parallel?
A : Adjusting speed
B : Adjusting armature resistance
C : By stopping the generator
D : Adjusting excitation

---

75 : Which of the following is the necessity of parallel operation of DC generators?
A : Continuity of supply
B : Reduce cost
C : Easy operation
D : Easy connection

---

76 : What is the cause for the fault, that brush makes chattering noise?
A : Over loading
B : Insufficient brush tension
C : Excessive brush pressure
D : Insufficient brush spring pressure

---

77 : What is the cause for the fault that bearing over heating in DC generator?
A : Unbalanced armature
B : Foreign material in air gap
C : More current in armature
D : Incorrect grade of bearing grease

---

78 : What is the cause for the fault that heavy sparking in light loads in DC generator?
A : Oily commutator surface
B : Defective alignment
C : Defective bearing
D : Wrong alignment

---

79 : Which machine converts electrical power to mechanical power?
A : Alternator
B : DC motor
C : DC generator
D : Transformer

---

80 : Which rule is used to find out direction of rotation of DC motor?
A : Flemings left hand rule
B : Flemings right hand rule
C : Cork screw rule
D : End rule

---

81 : Which type of magnetic field is necessary for working of DC motor?
A : Pulsating magnetic field
B : Alternating magnetic field
C : Rotating magnetic field
D : Uniform magnetic field

---

82 : What is the value of angle between fingers in Flemings left hand rule?
A : Right angles to each other
B : 40 degrees to each other
C : 45 degrees to each other
D : 60 degrees to each other

---

83 : Which formula is used to find out back emf in DC motor?
A :

$$Eg = \frac{\varphi ZN}{60} \times \frac{A}{P}$$

B :

$$Eg = \frac{AZN}{60} \times \frac{P}{\varphi}$$

C :

$$Eb = \frac{\varphi ZN}{60} \times \frac{P}{A}$$

D :

$$Eb = \frac{PZN}{60} \times \frac{A}{\varphi}$$

---

84 : What is the unit of torque in DC motor?
A : Joule
B : Newton
C : Newton - metre
D : Watt

---

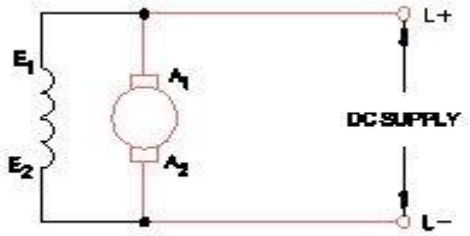
85 : Which represent the turning or twisting moment of force in an axis?
A : Centrifugal force
B : Speed
C : Twisting
D : Torque

---

86 : Which motor has very high starting torque?
A : DC series motor
B : DC shunt motor
C : DC differential compound motor
D : DC cumulative compound motor

---

87 : What is the name of DC motor?



A : Short shunt compound motor
B : DC Series motor
C : DC Shunt motor
D : Long shunt compound motor

---

88 : What are the field winding terminals of a DC shunt motor?
A : E1 and E2
B : A1 and A2
C : D1 and D2
D : F1 and F2

---

89 : Which type of motor considered as constant speed motor?
A : DC shunt motor
B : DC series motor
C : AC series motor
D : Universal motor

---

90 : How shunt field is connected to armature in DC shunt motor?
A : Series
B : Parallel
C : Series parallel
D : Combination

---

91 : Which is torque expression of DC series motor?
A :

$T \propto V\text{-}E_b$

B :

$T \propto I_a^2$

C :

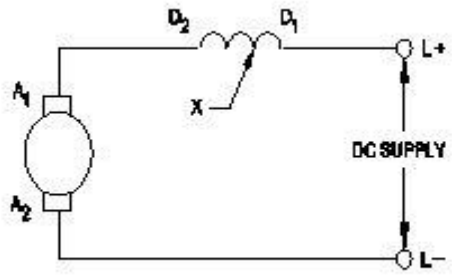
$T \propto I_a$

D :

$$T \propto \frac{E_b}{\varphi}$$

---

92 : What is the name of part marked as X?



A : Series field
B : Shunt field
C : Armature
D : Compensating winding

---

93 : Which motor is to be started with load?
A : 3 Phase induction motor
B : Slip ring induction motor
C : DC series motor
D : DC shunt motor

---

94 : Where the series motor is used?
A : Lathe
B : Hoist
C : Pumpset
D : Welding

---

95 : Which motor is used in heavy construction trucks?
A : Differential compound motor
B : Cumulative compound motor
C : DC shunt motor
D : DC series motor

---

96 : Which motor has both shunt field and series field winding?
A : Compound motor
B : Shunt motor
C : Series motor
D : Capacitor motor

---

97 : Which motor is used in steel rolling machinery?
A : DC Differential compound
B : DC cumulative compound motor
C : DC series motor
D : DC shunt motor

---

98 : Which protect DC motor from over load?
A : Commutator
B : Field diverter
C : Armature diverter
D : Starter

---

99 : How starting current is reduced in DC motors?
A : By using armature diverter
B : By using field diverter
C : By using starters
D : By controlling speed

---

100 : Which part of DC motor starter hold the handle in ON position?
A : OLR
B : No volt coil
C : Protective resistor
D : Spiral spring

---

101 : How the starting resistance is connected with armature of DC motor?
A : Parallel with armature
B : Series with armature
C : Series with field
D : Across with field

---

102 : Which starter is used for starting a DC compound motor?
A : Two point starter
B : DOL starter
C : Four point starter
D : Star-Delta starter

---

103 : What is the function of protective resistor in DC four point starter
A : To limit current in holding coil
B : To limit armature current
C : To limit field current
D : To limit the speed

---

104 : Which type of starter is used for DC series motor
A : DOL starter
B : Four point starter
C : Two point starter
D : Three point starter

---

105 : Which relation gives the speed of a DC motor?
A :

$$N \propto \frac{E_b}{\varphi}$$

B :

$$N \propto \frac{\varphi}{E_b}$$

C :

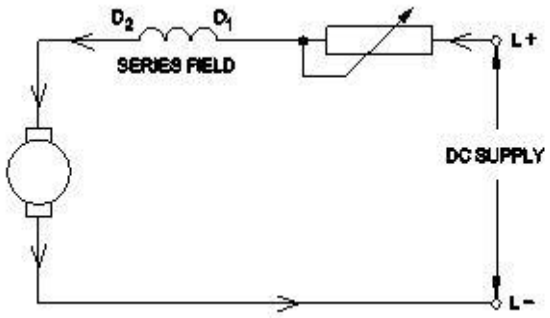
$$N \propto \frac{V + I_a R_a}{\varphi}$$

D :

$$N \propto I_a R_a$$

---

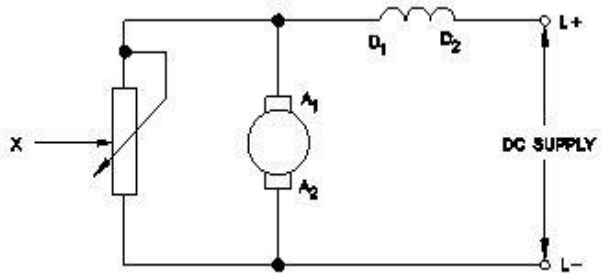
106 : Which method of speed control of DC motor?



A : Supply voltage control
B : Field tapping
C : Field diverter
D : Armature diverter

---

107 : What is the part marked as X?



A : Diverter
B : Field coil
C : Starting resistor
D : Armature

---

108 : Which method of speed control used in DC shunt motor to control the speed below normal?
A : Field control
B : Armature control
C : Field tapping method
D : Field diverter method

---

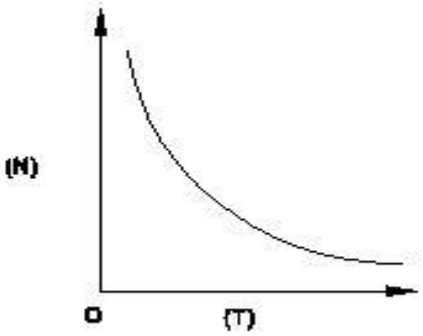
109 : Which method of speed control used in DC motor to control the speed above normal
A : Field control
B : Armature control
C : Supply voltage control
D : Tapped field control

---

110 : Which method of speed control used for variation of speed from zero to above normal?
A : Supply voltage
B : Armature control
C : Shunt field control
D : Ward-Leanard system

---

111 : Which motor has this speed - torque characteristic?



A : DC series motor
B : DC shunt motor
C : Cumulative compound motor
D : Differential compound motor

---

112 : Which motor is used for traction purpose?
A : DC shunt motor
B : DC compound motor
C : DC series motor
D : Capacitor motor

---

113 : Which motor is used for grinders and polishers?
A : DC series motor
B : DC shunt motor
C : Differential compound motor
D : Cumulative compound motor

---

114 : Which instrument is used to measure insulation resistance of DC motor?
A : Earth tester
B : Megger
C : Voltmeter
D : Ammeter

---

115 : Which is the major reason for open circuit in armature circuit of DC machine?
A : Over voltage
B : Low voltage
C : Over load
D : Loose commulator segments

---

116 : Which test is conducted to determine the winding earth leakage of a DC motor?
A : Continuity test
B : Ground test
C : Short circuit test
D : Open circuit test

117 : What is the angular displacement of 3 phase voltages?
A : 120 electrical degrees
B : 90 electrical degrees
C : 180 electrical degrees
D : 360 electrical degrees

---

118 : What is the factor relating to line voltage and phase voltage?
A : √3
B : √2
C : 1
D : 3

---

119 : What is the formula for power in delta connection
A :

$$P=3xV_L \times I_L \times Cos\theta$$

B :

$$P=\sqrt{3} \times V_{ph} \times I_{ph} \times Cos\theta$$

C :

$$P=3 \times V_L \times I_{ph} \times Cos\theta$$

D :

$$P=\sqrt{3} \times V_L \times I_L \times Cos\theta$$

---

120 : What is the value of neutral current in balanced star connected 3 phase load?
A : 0 Amp
B : 1.73 Amp
C :

$$\frac{I_L}{\sqrt{3}} Amp$$

D :

$$I_{ph}\ Amp$$

---

121 : What is the relation between line voltage (VL) and phase voltage (Vph) in 3 phase delta connection?
A :

$$V_L = V_{ph}$$

B :

$$V_L = \sqrt{3} \times V_{ph}$$

C :

$$V_L = 3xV_{ph}$$

D :

$$V_L = \frac{V_{ph}}{\sqrt{3}}$$

---

122 : What is the line voltage if phase voltage is 415V in delta connection?
A : 415V
B : 400
C : 240V
D : 138V

---

123 : Which is the type of load when the phase currents of a 3 phase circuit are same?
A : Balanced load
B : Unbalanced load
C : No load
D : Full load

---

124 : Which is the type of load if the phase currents of a 3 phase system are different?
A : Full load
B : No load
C : Balanced load
D : Unbalanced load

---

125 : How many number of watt meter to be used for balanced 3 phase power measurement?
A : One
B : Two
C : Three
D : Four

---

126 : Which method is used for 3f power measurement when load is unbalanced?
A : One watt meter method
B : Voltmeter method
C : Ammeter method
D : Three watt meter method

---

127 : What is the value of power factor when two watt meter readings are equal in 2 watt meter method of power measurement?
A : Unity
B : 0.5 lagging
C : 0.5 leading
D : Less than 0.5

---

128 : What is the reading in second watt meter W2 if the first watt meter reading is W1 = 100W at the p.f 0.5?
A : 200W
B : Zero
C : 100W
D : 50W

---

129 : What is the formula for total power in three watt meter method of power measurement?
A : W1 - W2
B : W1+W2+W3
C : W1+W2
D : W1(W2+W3)

---

130 : Where two watt meter method of power measurement is used?
A : Balanced load only
B : Unbalanced load only
C : Balanced and unbalanced load
D : Half full load

---

131 : What is the value of line current if phase current is 10 Amp in star connection?
A : 17.3 Amp
B : 10 Amp
C : 5 Amp
D : 9 Amp

---

132 : Calculate the phase current if the line current is 30 Amp in delta connection?
A : 30A
B : 17.3A
C : 15.6A
D : 10Amp

---

133 : Which working principle AC generator?
A : Faradays laws of electro magnetic induction
B : Ohms law
C : Lenzs law
D : Faradays laws of electrolysis

---

134 : Which Emf is induced in a AC generator?
A : Dynamically induced emf
B : Statically induced emf
C : Counter emf
D : Self induced emf

---

135 : Which part rotates in large alternator?
A : Field
B : Armature
C : Brush
D : Yoke

---

136 : Which material is used to construct armature core of alternator?
A : Spring steel
B : Mild steel
C : Silicon steel
D : Forged steel

---

137 : Which rotor is used in high speed alternator?
A : Smooth cylindrical
B : Salient pole
C : Projected pole
D : Squirrel cage rotor

---

138 : Which type of slots are used in armature core of alternator?
A : Totally closed
B : Wide open
C : Semi closed
D : Semi open

---

139 : What are the terminal markings of a 3 phase star connected alternator?
A : U, V, W and N
B : A, B, C and N
C : 1, 2, 3 and 4
D : X, Y, Z, N

---

140 : What is the phase displacement between three windings in an alternator?
A : 120°
B : 90°
C : 360°
D : 180°

---

141 : Which type of rotor has small diameter and large axial length?
A : Smooth cylindrical
B : Salient pole
C : Projecting pole
D : Squirrel cage

---

142 : What is the excitation source of a large alternator?
A : DC shunt generator
B : Rectifier
C : DC series generator
D : Battery

---

143 : Which type of alternator is used for high speed operation?
A : Salient pole alternator
B : Smooth cylindrical pure alternator
C : Projected pole alternator
D : Impulse turbo alternator

---

144 : How the alternators are rated?
A : KVA
B : KW
C : KVAR
D : KWH

---

145 : What is the Emf equation of an ideal alternator?
A :

$$2.22\, F\phi_V$$

B :

$$4.44\, K_d\, k_c\, F\, \phi T_V$$

C :

$$2.22\, \phi T_V$$

D :

$$4.44\phi\, FT_V$$

---

146 : What is the formula for calculating total load on 3-phase alternator?

A :

$$\sqrt{3}\, V_L \times I_L \times \text{Cos}\, \phi$$

B :

$$\sqrt{3}\, V_p\ I_p\ \text{Cos}\, \phi$$

C :

$$V_p\ I_p\ \text{Cos}\, \phi$$

D :

$$\sqrt{3}\, V_p\ I_p\ \text{Sin}\, \phi$$

---

147 : What is the formula for voltage regulation of an alternator?

A :

$$\frac{V_{NL} - V_{FL}}{V_{FL}} \times 100$$

B :

$$\frac{V_{FL} - V_{NL}}{V_{FL}} \times 100$$

C :

$$\frac{V_{NL} + V_{FL}}{V_{FL}} \times 100$$

D :

$$\frac{V_{NL} + V_{FL}}{V_{NL}} \times 100$$

---

148 : What is the condition for voltage in parallel operation of 3-phase alternator?

A : Must be same
B : Must be different
C : Must be low
D : Must be high

---

149 : Which is the condition for parallel operation of 3-phase alternator?

A : Frequency must be same
B : Voltage must be different
C : Sequence must be different
D : Polarity must be different

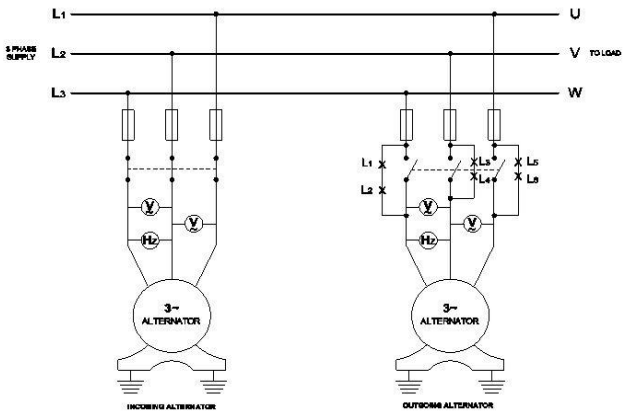
---

150 : 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

---

151 : Which method of synchronising is given?



A : Dark lamp method
B : Bright lamp method
C : Synchroscope method
D : Two bright one dark method

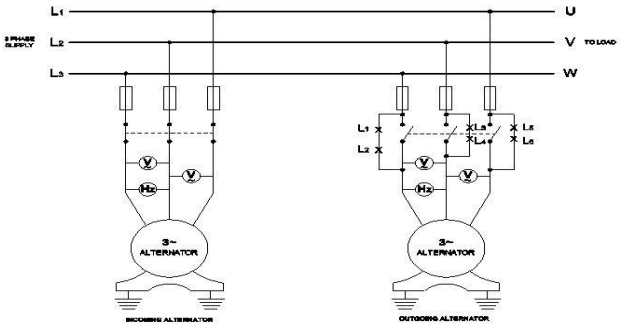
---

152 : What method is used for parallel operation of alternator?

A : Dark and bright lamp method
B : Ward - leonald method
C : Over excitation method
D : Under excitation method

---

153 : Which is the correct time of parallel operation of alternators in lamp method illustrated?



A : All 3 lamps in dark
B : All 3 lamps in bright
C : Two lamps bright and one lamp dark
D : One lamp bright and two lamps dark

---

154 : How the 3 lamps glow under parallel operation of alternators in bright lamp method?
A : All 3 lamps in dark
B : All 3 lamps in bright
C : Two lamps bright and one lamp dark
D : One lamp bright and two lamps dark

---

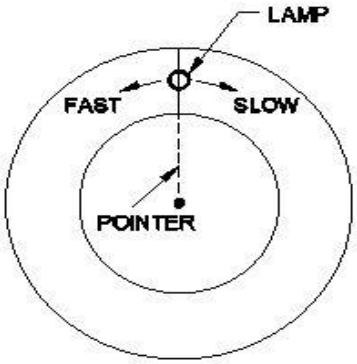
155 : How many lamps are required for parallel operation of two 3 phase alternators?
A : 3
B : 6
C : 8
D : 10

---

156 : What is the name of the instrument used to indicate the correct time for parallel operation of alternators?
A : Megger
B : Phase sequence meter
C : Synchroscope
D : Centre zero ammeter

---

157 : Which is the exact instant of parallel operation of alternators in Weston synchroscope illustrated?



A : Indicating the fast direction
B : Indicating the slow direction
C : Visible at its central position
D : Oscillating in between fast and slow

---

158 : Which instrument is the special form of power factor method?
A : Synchroscope
B : Frequency meter
C : Wattmeter
D : Phase sequence meter

---

159 : Which is used in Weston type electro dynamo meter synchroscope?
A : Iron vane
B : Fixed coil
C : Transformer
D : Permanent magnet

---

160 : What is the basic working principle of single phase universal motors?
A : Same as DC Motors
B : Faradays laws
C : Rotating magnetic field theory
D : Flemings right hand rule

---

161 : Which motor has very low starting torque?
A : Three phase squirrel cage motor
B : Three phase slip ring motor
C : Resistance start induction run motor
D : Universal motor

---

162 : Which type of rotor is used in capacitor start induction run single phase motor?
A : Slip ring type
B : Commutator type
C : Wound rotor type
D : Squirrel cage type

---

163 : How many number of windings are there in split phase resistance type induction motor?
A : 1
B : 2
C : 3
D : 4

---

164 : Which winding circuit will have more resistance in split phase resistance type induction motor?
A : Main winding
B : Compensating winding
C : Auxilary winding
D : Damper winding

---

165 : Which motor operates without centrifugal switch?
A : Permanent capacitor motor
B : Capacitor start capacitor run motor
C : Capacitor start induction run motor
D : Resistance induction run motor

---

166 : Which winding is disconnected by the centrifugal switch in split phase resistance type induction motor
A : Main winding
B : Auxilary winding
C : Compensating winding
D : Damper winding

---

167 : Which speed the centrifugal switch acts in a single phase induction motor?
A : About 70% of speed
B : About 25% of speed
C : About 50% of speed
D : At full speed

---

168 : Which single phase induction motor has high starting torque?
A : Split phase induction motor
B : Capacitor start induction run motor
C : Shaded pole motor
D : Two value Capacitor motor

---

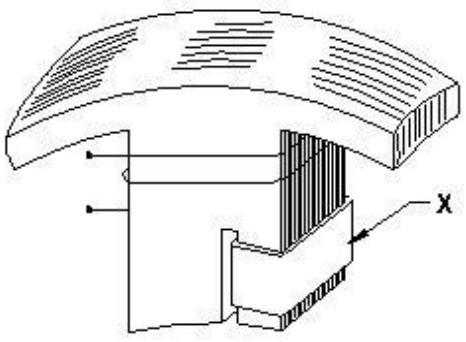
169 : Which winding is disconnected at 70% of speed in a capacitor start induction run motor?
A : Auxilary winding
B : Main winding
C : Running winding
D : Damper winding

---

170 : What is the another name of main winding in a single phase capacitor start induction run motor?
A : Auxilary winding
B : Damper winding
C : Running winding
D : Starting winding

---

171 : What is the part marked as X?



A : Main coil
B : Shading coil
C : Yoke
D : Poles

---

172 : What is the material used to make the shading coil of a shaded pole motor?
A : Aluminium
B : Brass
C : Silver
D : Copper

---

173 : Which single phase motor operates in both AC and DC supply?
A : Shaded pole motor
B : Two value Capacitor motor
C : Universal motor
D : Split phase induction motor

---

174 : What is the another name of Universal motor?
A : AC single phase series motor
B : Three phase induction motor
C : Shaded pole motor
D : Synchronous motor

---

175 : Which of the motor has wound rotor and commutator?
A : Capacitor start capacitor run motor
B : Capacitor start induction run motor
C : Shaded pole motor
D : Universal motor

---

176 : What is the value of starting torque for a universal motor?
A : 100 % of full load torque
B : Below 50% of full load torque
C : 450 % of full load torque
D : 150 % of full load torque

---

177 : Which motor runs at synchronous speed?
A : Capacitor start induction run motor
B : Shaded pole motor
C : Universal motor
D : Hysteresis motor

---

178 : Which motor stator is wound for three phase?
A : Reluctance motor
B : Capacitor start induction run motor
C : Shaded pole motor
D : Universal motor

---

179 : Which motor stator consists of multiple salient electro magnet poles?
A : Shaded pole motor
B : Repulsion motor
C : Capacitor start induction run motor
D : Universal motor

---

180 : Which of the motor has step movements?
A : Shaded pole motor
B : Repulsion motor
C : Stepper motor
D : Universal motor

---

181 : Which type of winding is done in the repulsion motor?
A : Distributed AC winding
B : DC lap or wave winding
C : Damper winding
D : Compensating winding

---

182 : Which motor is used in food mixer?
A : Universal motor
B : Stepper motor
C : Capacitor start induction run motor
D : Repulsion motor

---

183 : Which motor is used for refrigerators and air conditioners?
A : Universal motor
B : Stepper motor
C : Capacitor start induction run motor
D : Two value Capacitor motor

---

184 : Which motor is used in toys and hair dryers?
A : Stepper motor
B : Universal motor
C : Shaded pole motor
D : Synchronous motor

---

185 : What is the speed of rotating magnetic field in a 3f induction motor?
A : Rotor speed
B : Synchronous speed
C : Motor speed
D : Rated speed

---

186 : Which equation is used for calculation synetronous speed of 3f induction motor.
A :

$$N_S = \frac{120P}{F}$$

B :

$$N_S = \frac{120f}{P}$$

C :

$$N_S = 120xPxF$$

D :

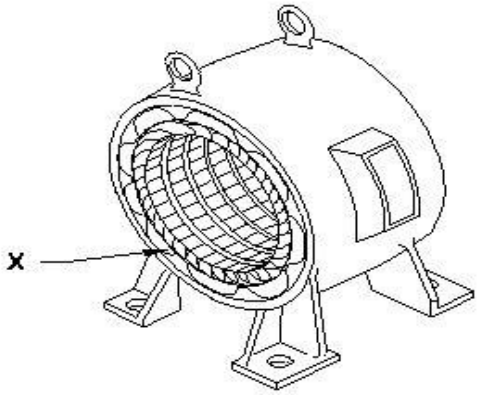
$$N_S = \frac{PF}{120}$$

---

187 : What is the synchronosis speed of a 3 phase induction motor if the supply frequency is 50 Hz and number of pole is 4?
A : 1400 rpm
B : 1500 rpm
C : 1450 rpm
D : 1000 rpm

---

188 : Name the part marked as X?



A : Terminal box
B : Yoke/Irame
C : Stator winding
D : Laminated steel core

---

189 : Which material is used to wound rotor of squirrel cage induction motor?
A : Aluminium
B : Enamelled copper conductor
C : Silicon steel
D : Copper bars

---

190 : Which part of squirrel cage rotor is short circuited?
A : End rings
B : Shaft
C : End cover hysteresis
D : Bearings

---

191 : Why the core of 3f induction motor is laminated?
A : To reduce friction loss
B : To reduce eddy current loss
C : To reduce hysterism loss
D : To reduce starting current

---

192 : What is the equation for rotor frequency of 3-phase induction motor?
A :

$$F_r = \frac{N_S - N_r}{N_s} \times F_S$$

B :

$$F_r = (N_r - N_s) \times F_s$$

C :

$$F_r = (N_s - N_r) \times F_s$$

D :

$$F_r = \frac{N_S - N_S}{N_r} \times F_S$$

---

193 : Which formula is used to find percentage slip in 3q induction?

A :

$$\%S = \frac{120f}{P} \times 100$$

B :

$$\%S = \frac{N_S - N_r}{N_s} \times 100$$

C :

$$\%S = \frac{N_S - N_r}{N_r} \times 100$$

D :

$$\%S = \frac{N_r - N_s}{N_s} \times 100$$

---

194 : Which speed of 3-phase induction motor runs?

A : Above synchronous speed
B : Below synchronous speed
C : Equal to synchronous speed
D : At slip speed

---

195 : What is the value of slip at the time of starting of 3 phase induction motor?

A : Two
B : Three
C : One
D : Zero

---

196 : Which is directly proportional to torque in 3 phase induction motor?

A : Rotor power factor
B : Stator frequency
C : Number of poles
D : Supply voltage

---

197 : What is phase angle difference between three windings in three phase squirrel cage induction motor?

A : 360°
B : 90°
C : 120°
D : 30°

---

198 : Which material is used to wound outer cage rotor bars of a double squirrelcage induction motor?

A : Brass
B : Aluminium
C : Copper
D : Silicon steel

---

199 : Which type of rotor is used in squirrelcage induction motor?

A : Wound type
B : Squirrel cage
C : Slipring type
D : Projecting type

---

200 : Why rotor bars of squirrel cage induction motor is skewed?

A : Reduce magnetic humming
B : Reduce losses
C : Improve efficiency
D : Improve capacity

---

201 : How to change the direction of rotation of a 3f squirrel cage induction motor?

A : By interchanging three terminals
B : By interchanging any two terminals
C : By disconnecting one terminal
D : By reducing the applied voltage

---

202 : Which type of starter is recommended to start upto 3 HP squirrelcage induction motors?

A : DOL starter
B : Auto transfer starter
C : Star-delta starter
D : Rotor resistance starter

---

203 : Which starter is in simple expensive and easy to start?

A : Rotor resistance starter
B : DOL starter
C : Semi automatic star delta starter
D : Auto transformer starter

---

204 : Which device in DOL starter provides effective protection against over load?

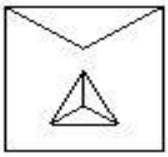
A : Holding coil
B : Back up fuse
C : Thermal relay
D : Push button switch

---

205 : How many number of contactors are used in a semi automatic star delta starter?
A : 6
B : 4
C : 5
D : 3

---

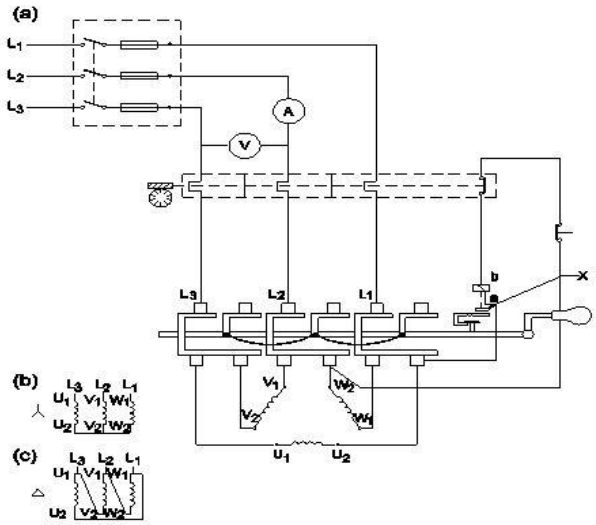
206 : Which type of AC 3 phase motor starter this BIS symbol represents?



A : Star delta starter
B : Rheostatic starter
C : Direct online starter
D : Pole changing starter

---

207 : Name the part marked as X in manual star delta starter?



A : Plunger
B : Lever plate
C : Stop button
D : Over load relay setting

---

208 : Which is the additional device used in automatic star delta starter than semi automatic star delta starter?
A : Push button station
B : Timer
C : OLR
D : Number of contacts

---

209 : How many times of starting current in 3f induction motor is reduced, while starting by star delta starter?
A : 3 times
B : 1/3 times
C :

$\sqrt{3}$ times

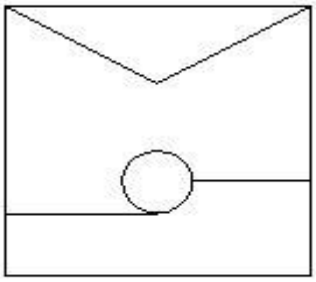
D : 1/2 times

---

210 : Which device is used in control of a star delta starter to stop the motor?
A : OLR
B : Star contactor
C : Delta contactor
D : Normally closed push button

---

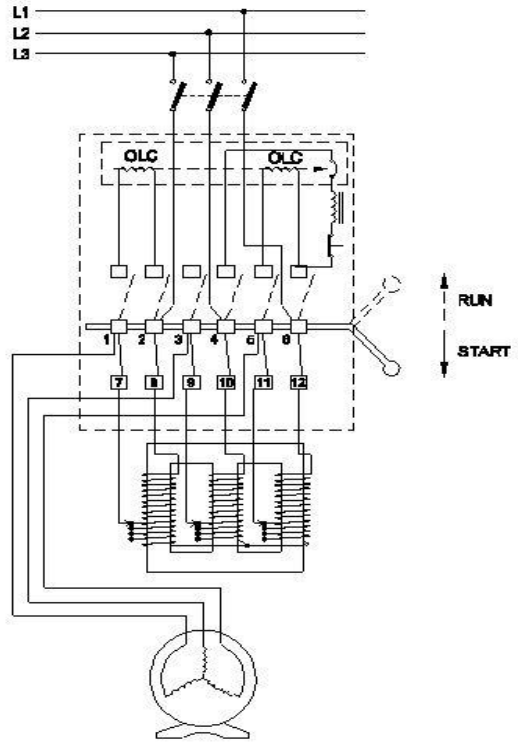
211 : What is the name of the starter symbol?



A : D.O.L starter
B : Auto transformer starter
C : Automatic star/delta starter
D : Semi automatic star/delta starter

---

212 : What is the name of the A.C motor starter?



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

---

213 : Which type of starter is used with reduced voltage tappings for 3 phase induction motor?
A : D.O.L starter
B : Star delta starter
C : Auto transformer starter
D : Rotor resistance starter

---

214 : How the voltage is reduced in auto transformer starter at the time of starting?
A : By reducing supply voltage
B : By adjusting the tappings by handle
C : By using step down transformer
D : By adding resistance with rotor

---

215 : Which induction motor, the external resistance is added to rotor circuit?
A : Squirrel cage induction motor
B : Double squirrel cage induction motor
C : Slip ring induction motor
D : Single phase induction motor

---

216 : Which motor is used to produce high starting torque at variable speed?
A : Repulsion motor
B : Permanent capacitor motor
C : 3 Phase slip ring induction motor
D : 3 Phase single squirrel cage induction motor

---

217 : 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

---

218 : 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

---

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

---

220 : Why external resistance is included in the rotor circuit at starting through 3 phase slipring induction motor starter?
A : To get high running torque
B : To reduce high starting current
C : To reduce the load current
D : To get increased speed at starting

---

221 : What is the effect of motor, if the rotor windings in slipring 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

---

222 : 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

---

223 : Which speed control method of 3 f motor is used only induction motor supplied by generator?
A : Casecade operation method
B : By changing the number of stator poles
C : By injection Emf in rotor circuit
D : By changing the supplied voltage

---

224 : Which method of speed control is only applicable for 3 phase slipring induction motor?
A : Casecade operation method
B : Rotor rheostat speed control
C : Changing the applied frequency method
D : Changing the number of stator poles method

---

225 : Which method of speed control of 3 phase induction motor above and below normal speed can be obtained?
A : By rotor rheostat control
B : By changing applied voltage
C : By injecting EMF in rotor circuit
D : By changing the number of stator poles

---

226 : Which method of speed control of 3 phase induction motor only two speeds can be obtained?
A : By cascade operation
B : By changing the applied voltage
C : By changing the supply frequency
D : By changing the number of stator poles

---

227 : Which method of speed control can be obtained from rotor side of 3 phase induction motor?
A : Voltage control
B : Cascade operation
C : Pole changing control
D : Supply frequency control

---

228 : Which principle the current sensing single phasing preventor works?
A : Equal currents with balanced loads
B : Different currents with balanced loads
C : Equal currents with unbalanced loads
D : Different currents with unbalanced loads

---

229 : What is called, if the order of 3 phase supply voltages reach the maximum value?
A : Phase relation
B : Phase sequence
C : Single phasing
D : Phase distortion

---

230 : What is the purpose of single phasing preventor?
A : Protects the motor by stopping automatically under balanced load
B : Provides three phase supply in sequence order
C : Prevents the motor from short circuit fault
D : Prevent the motor from over load

---

231 : Which type of single phase preventer is used for the motor with constant load?
A : Mechanical single phasing preventor with bimetal relay
B : Mechanical single phasing preventer with coils
C : Voltage sewing single phasing preventer
D : Current sewing single phasing preventer

---

232 : Which board can be accessed from rear as well as from front side?
A : Switch board
B : Panel board
C : Danger board
D : Main switch board

---

233 : How the name identification boards are fixed on the panel?
A : Welded
B : Riveted
C : Brazed
D : Soldered

---

234 : What is the name of the accessory used to fix MCB and contactors in panel board?
A : Thimbles
B : G clamp
C : Din rail
D : Grommets

---

235 : When the isolation switch of a panel board should be operated?
A : In ON load condition
B : In normal load condition
C : In over load condition
D : In OFF load condition

---

236 : Which PVC material is used in panel board for providing pathway for wiring inside?
A : Raceways
B : Grommets
C : Din rail
D : Wire ferrules

---

237 : What is the function of ferrules in panel boards?
A : To identify the panel
B : To identify the switch
C : To identify the wire
D : To identify raceways

---

238 : What is the name of bushing used to prevent dirt,water and insects entering the panel board?
A : Raceways
B : Thimbles
C : Sleeves
D : Grommets

---

239 : What is the minimum clearance distance required infront of a panel or switch board?
A : 1 metre
B : 0.8 metre
C : 0.6 metre
D : 0.5 metre

---

240 : What is the name of part in a panel board where cables are completely enclosed?
A : Meter cabinet
B : Cable alley
C : Bus chamber
D : Cubicle

---

241 : Which part of a panel board should be earthed as per IE rule?
A : All live parts
B : All terminals
C : All metal parts
D : All bus bars

---

242 : What should be prepared first to design and estimate a panel board?
A : Schematic diagram
B : Panel board
C : Switchgears list
D : Accessories list

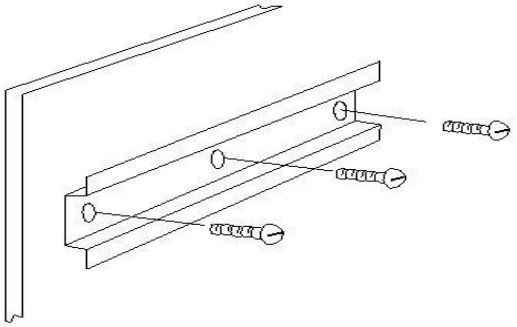
---

243 : What is the next step involved in panel design after preparing Schematic diagram?
A : Preparation of wiring diagram
B : Panel board measurement
C : Preparation of accessories list
D : Preparation of Meter cabinet

---

244 : What is the cutting angle value of iron angle in panel boards?
A : 90^o
B : 75^o
C : 60^o
D : 45^o

245 : Which is the name of preparation of control panel?



A : Fixing of Raceways
B : Fixing of G channel
C : Fixing of Din rail
D : Fixing of PVC channel

---

246 : What is the minimum clear distance required between bare conductors in panel board?
A : 2.5 cm
B : 10 cm
C : 3.8 cm
D : 1.2 cm

---

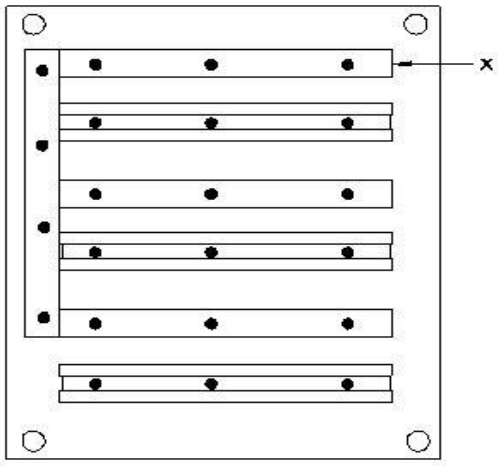
247 : What is the name of device used to fix and hold cables in a secure manner inside the panel board?
A : Thimbles
B : Grommets
C : Wire ferrules
D : Wire clip

---

248 : Which item is used to terminate the cable ends in a panel board?
A : Grommets
B : Wire ferrules
C : Thimbles
D : Raceways

---

249 : What is the part marked as x in the panel board?



A : Raceways
B : Bushing
C : Grommets
D : Thimbles

---

250 : What is the minimum number of earth terminals needed on a panel board
A : 2
B : 4
C : 3
D : 1

---

251 : What is the name of item used to fix the cables rigidly to the body of panel board?
A : Bushing
B : Grommets
C : Ferrules
D : Gland

---

252 : Which material is used to make earth bus bar in panel boards
A : Copper
B : Silver
C : Iron
D : PVC

---

253 : Which step is involved in testing load performance in panel boards?
A : Second step
B : First step
C : Last step
D : Third step

ANSWERS :

1:C; 2:C; 3:D; 4:A; 5:B; 6:A; 7:B; 8:C; 9:C; 10:B; 11:A;
12:A; 13:B; 14:C; 15:D; 16:C; 17:D; 18:C; 19:B; 20:A;
21:C; 22:D; 23:A; 24:D; 25:A; 26:D; 27:C; 28:A; 29:A;
30:B; 31:C; 32:B; 33:A; 34:B; 35:A; 36:B; 37:D; 38:B;
39:C; 40:B; 41:B; 42:A; 43:B; 44:A; 45:B; 46:A; 47:A;
48:B; 49:A; 50:B; 51:A; 52:A; 53:A; 54:B; 55:C; 56:A;
57:B; 58:C; 59:A; 60:B; 61:B; 62:D; 63:A; 64:B; 65:A;
66:C; 67:C; 68:A; 69:B; 70:A; 71:A; 72:C; 73:C; 74:D;
75:A; 76:B; 77:D; 78:D; 79:B; 80:A; 81:D; 82:A; 83:C;
84:C; 85:D; 86:A; 87:C; 88:A; 89:A; 90:B; 91:B; 92:A;
93:C; 94:B; 95:D; 96:A; 97:B; 98:D; 99:C; 100:B;
101:B; 102:C; 103:A; 104:C; 105:A; 106:A; 107:A;
108:B; 109:A; 110:D; 111:A; 112:C; 113:B; 114:B;
115:D; 116:B; 117:A; 118:A; 119:D; 120:A; 121:A;
122:A; 123:A; 124:D; 125:A; 126:D; 127:A; 128:B;
129:B; 130:C; 131:B; 132:B; 133:A; 134:A; 135:A;
136:C; 137:A; 138:A; 139:A; 140:A; 141:A; 142:A;
143:B; 144:A; 145:B; 146:A; 147:A; 148:A; 149:A;
150:B; 151:A; 152:A; 153:A; 154:C; 155:B; 156:C;
157:C; 158:A; 159:C; 160:A; 161:C; 162:D; 163:B;
164:C; 165:A; 166:B; 167:A; 168:D; 169:A; 170:C;
171:B; 172:D; 173:C; 174:A; 175:D; 176:C; 177:D;
178:A; 179:B; 180:C; 181:B; 182:A; 183:D; 184:C;
185:B; 186:B; 187:B; 188:C; 189:D; 190:A; 191:B;
192:A; 193:B; 194:B; 195:C; 196:A; 197:C; 198:A;
199:B; 200:A; 201:B; 202:A; 203:B; 204:C; 205:D;
206:A; 207:A; 208:B; 209:C; 210:D; 211:B; 212:B;
213:C; 214:B; 215:C; 216:C; 217:D; 218:B; 219:C;
220:B; 221:A; 222:D; 223:B; 224:B; 225:B; 226:D;
227:B; 228:A; 229:B; 230:A; 231:D; 232:A; 233:B;
234:C; 235:D; 236:A; 237:C; 238:D; 239:A; 240:B;
241:C; 242:A; 243:C; 244:D; 245:C; 246:A; 247:D;
248:C; 249:A; 250:A; 251:D; 252:A; 253:C;