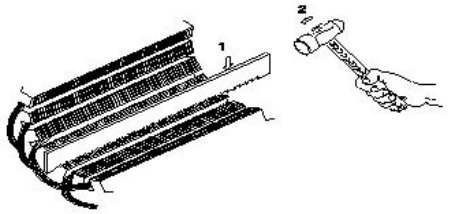
Dc Motor

1). 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 firmly
(D) To protect the motor if the field opens
Correct Answer : D

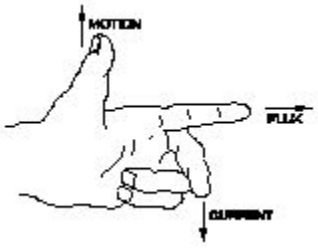
2). What is the operation in rewinding process?



(A) Cleaning of slots
(B) Removing of winding
(C) Removing of wedges
(D) Cutting of winding wire
Correct Answer : C

3). How many number of parallel paths are in a wave wounded 6 pole DC machine?
(A) 2
(B) 4
(C) 6
(D) 8
Correct Answer : A

4). What is the name of rule as shown in figure?

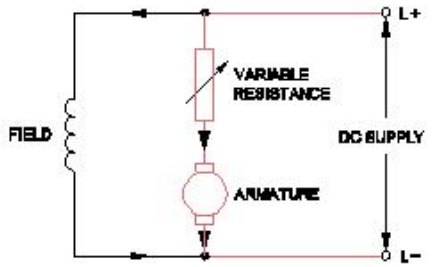


(A) Fleming's right hand rule
(B) Palm rule
(C) Fleming's left hand rule
(D) Thumb rule
Correct Answer : C

5). Which material is used for starting resistance of DC starters?
(A) Eureka
(B) Nichrome
(C) Manganin
(D) Constantine
Correct Answer : A

6). 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 method
(D) Ward Leonard speed control method
Correct Answer : D

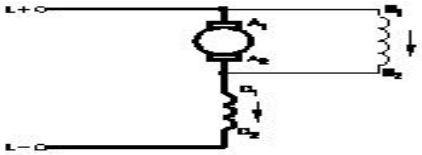
7). What is the name of the speed control method as shown in the circuit?



(A) Field control method
(B) Armature control method
(C) Field tapping control method
(D) Field diverter control method
Correct Answer : B

8). What is the name of the folded edges of the slot liner?
(A) Overhang insulation
(B) Coil separator
(C) Shaft insulation
(D) Cuffing
Correct Answer : D

9). What is the type of the DC motor as shown in the diagram?

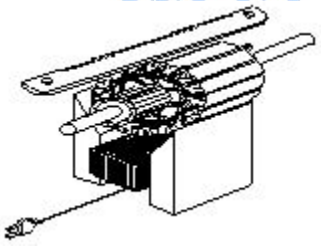


(A) Shunt motor
(B) Series motor
(C) Long shunt compound motor
(D) Short shunt compound motor
Correct Answer : D

10). What is the purpose of tapes in winding?
(A) Insulate slots
(B) Bind the coils
(C) Wrap the conductor
(D) Insulate exposed conductors
Correct Answer : C

11). Which type of winding wire is used to wind submersible pump motors?
(A) PVC covered type
(B) Terylene thread type
(C) Super enamelled type
(D) Double cotton covered type
Correct Answer : A

12). 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
Correct Answer : B

13). 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
Correct Answer : B

14).What is the action of assist the induced emf in a running D.C motor?
(A) Assist the applied voltage
(B) Opposes the applied voltage
(C) Increases the armature current
(D) Decreases the armature current
Correct Answer : B

15). What is the purpose of no volt coil in 3 point starter?
(A) To improve the torque
(B) To increase the field current
(C) To increase the back emf
(D) To disconnect the motor if power fails
Correct Answer : D

16). Why the carbon composition brushes are used in the D.C motor?
(A) Increases the starting torque
(B) Decreases the starting torque
(C) Protects the armature from over loading
(D) Reduces the spark in the commutator
Correct Answer : D

17). Which method of speed control offers the speed below the rated speed of DC shunt motor?
(A) Field control method
(B) Connecting additional winding in series with field
(C) Armature control method
(D) Connecting additional resistance in series with field
Correct Answer : C

18). Why it is better to change the direction of armature current to change the direction of rotation of DC compound motor?
(A) To increase the rated speed
(B) To maintain the motor characteristics
(C) To increase the output power
(D) To increase the efficiency
Correct Answer : B

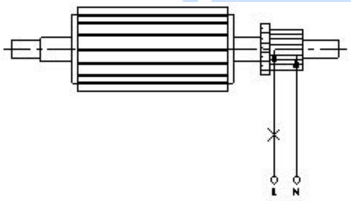
19). Which is inversely proportional to the speed of DC motor?
(A) Field flux
(B) Applied voltage
(C) Armature resistance
(D) Load current

Correct Answer : A

20). Why the starters are required to start the D.C motors?
(A) Regulate the field voltage
(B) Reduce the armature current
(C) Control the armature reaction
(D) Increase the armature current
Correct Answer : B

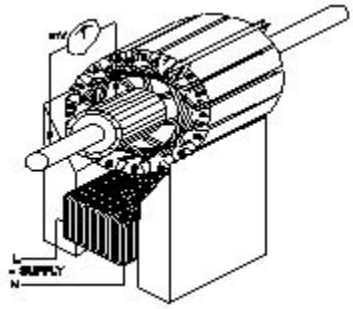
21). Which instrument is used to test the armature winding for short and open circuit?
(A) Tong Tester
(B) Series test lamp
(C) External Growler
(D) Megger
Correct Answer : C

22). What is the name of the test as shown in the figure?



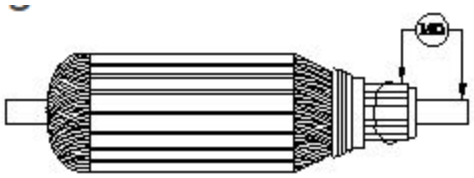
(A) Open circuit test
(B) Shorted commutator test
(C) Grounded commutator test
(D) Drop test
Correct Answer : B

23). What is the name of the test as shown in the figure?



(A) Test for Grounded coil
(B) Test for Shorted coil
(C) Test for open coil
(D) Drop test
Correct Answer : A

24). What is the name of the test as shown in the figure?

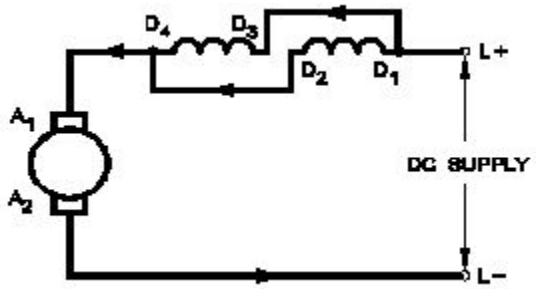


(A) Open circuit test
(B) Armature winding resistance test
(C) Insulation resistance test
(D) Short circuit test
Correct Answer : C

25). 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
Correct Answer : C

26). 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
Correct Answer : D

27). Which type of speed control of D.C series motor as shown in the figure?



(A) Field parallel method
(B) Field diverter method
(C) Field tapping method
(D) Armature diverter method
Correct Answer : A

28). 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
Correct Answer : D

29). What is the name of the winding if the end lead of coil 1 is connected to the beginning lead of the adjacent coil 2 through the commutator segment?
(A) Simplex lap winding
(B) Duplex lap winding
(C) Simplex wave winding
(D) Duplex wave winding
Correct Answer : A

30). 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
Correct Answer : D

31). Why the series field is short circuited at the time of starting in the differential compound motor?
(A) To reduce the starting current
(B) To decrease the back EMF
(C) To decrease the speed of motor
(D) To maintain the proper direction of rotation
Correct Answer : D

32). 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
Correct Answer : B

33). How the no volt coil is connected in a three point starter with DC shunt motor?
(A) Directly connected to the supply
(B) Connected in series with the armature
(C) Connected in parallel with the armature
(D) Connected in series with the shunt field
Correct Answer : D

34). Which DC Motor is designed to work with the full load limits?
(A) Shunt motor
(B) Series motor
(C) Cumulative compound motor
(D) Differential compound motor
Correct Answer : D

35). Which rule is used to determine 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
Correct Answer : C

36). Which is used to increase the insulation property of the insulating material used in the winding?
(A) Enamel paint
(B) Petrol
(C) Diesel
(D) Varnish
Correct Answer : D

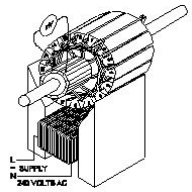
37). What is the formula to calculate the back emf of a D.C motor?
(A) E_b = V/Ia Ra Volts
(B) Eb = V*Ia Ra Volts
(C) Eb = V - Ia Ra Volts
(D) Eb = V + Ia Ra Volts
Correct Answer : C

38). 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
(D) Decrease the voltage in field coil
Correct Answer : A

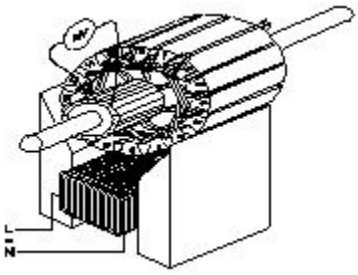
39). What is the formula to calculate the armature current taken by the D.C shunt motor?
(A) Ia = V/R_a
(B) Ia = E_b/R_a
(C) Ia = $V – E_b/R_a$
(D) Ia = $V + E_b/R_a$
Correct Answer : C

40). Which fault in armature winding is determined by the test as shown in figure?



(A) Open coil fault
(B) Coil insulation fault
(C) Grounded coil fault
(D) Grounded core fault
Correct Answer : A

41). Which growler test for armature is illustrated as shown in the figure?

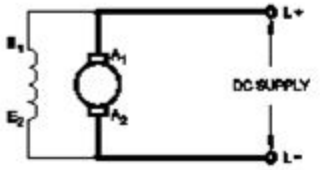


(A) **Open coil test**
(B) Grounded coil test
(C) Shorted coil test
(D) Shorted commutator test
Correct Answer : A

42). Which type of DC armature winding has the front pitch (YF) greater than back pitch (YB)?
(A) Lap winding
(B) Wave winding
(C) Progressive winding
(D) Retrogressive winding
Correct Answer : D

43). How the opposite polarity of adjacent poles of a 4 pole DC motor is obtained?
(A) By increasing the number of turns in coil
(B) By decreasing the number of turns in coil
(C) By making the current flow in same direction
(D) By making the current flow in opposite direction
Correct Answer : D

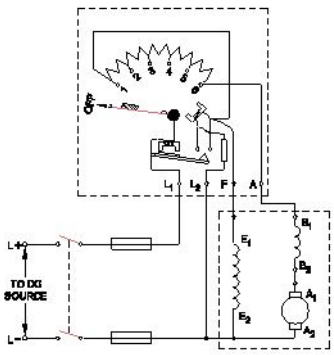
44). What is the name of the D.C motor as shown in the figure?



(A) D.C shunt motor
(B) D.C series motor
(C) D.C differential compound motor
(D) D.C cumulative compound motor
Correct Answer: A

45). What is the reason for reduction in speed of a D.C shunt motor from no load to full load?
(A) Shunt field current increases
(B) Shunt field current constant
(C) Armature voltage drop increases
(D) Armature voltage drop decreases
Correct Answer: C

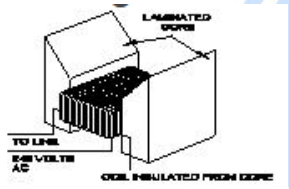
46). What happens if the starting resistance of four point starter opens while DC compound motor is running?



(A) Motor stopped
(B) Runs at slow speed
(C) Runs at very high speed
(D) Runs at reverse direction
Correct Answer : A

47). Which insulating material belongs to class 'B' insulation?
(A) Cotton
(B) Bamboo
(C) Fiberglass
(D) Leatheroid paper
Correct Answer: C

48). What is the name of the equipment as shown in the figure?

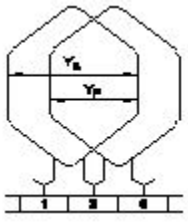


(A) Megger
(B) Earth resistance tester
(C) Internal growler
(D) External growler
Correct Answer : D

49). Calculate the average pitch (YA) for retrogressive wave winding, if the number of armature conductor = 14, number of slots = 7 and number of poles = 2
(A) 4
(B) 6
(C) 8
(D) 14
Correct Answer : B

50). What is the permissible temperature value of class ‘F’ insulation?
(A) 90°C
(B) 105°C
(C) 120°C
(D) 155°C
Correct Answer: D

51). Which type of armature winding is illustrated as shown in the figure?



(A) Triplex wave winding
(B) Duplex wave winding
(C) Progressive lap winding
(D) Retrogressive lap winding
Correct Answer : C

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