DC MACHINES (DC Generator & DC Motors)

Q.1. If field current is decreased in shunt dc motor, the speed of the motor: -
(1) Remains same. (2) Increases. (3) Decreases. (4) NOA

Q.2. What is the mechanical power developed by a DC series motor is maximum
(1) Back EMF is equal to half the applied voltage. (2) Back EMF is equal to the applied voltage. (3) Back EMF is equal to Zero. (4) NOA

Q.3. What is the shunt resistance component equivalent circuit obtained by no load test of an induction motor representative of? -
(1) Windage & friction loss. (2) Core Loss only. (3) Both 1 & 2. (4) Copper loss

Q.4. Hysteresis loop represents the area of: -
(1) Copper loss. (2) Eddy current loss. (3) Hysteresis loss. (4) Total Iron loss

Q.5. Commutator in DC generator is used for: -
(1) Collecting current. (2) Reduce Losses. (3) Increase efficiency. (4) Convert AC armature current into DC

Q.6. A DC generator without commutator is a: -
(1) AC Generator. (2) DC Motor. (3) DC Generator (4) Induction Motor

Q.7. Lap (II) & Wave (Series) windings are used respectively for :- (BLT-P910)
(1) High current, Low Voltage. (2) Low current, Low Voltage (3) High current, High Voltage (4) None is correct

Q.8. Lap (II) Parallel windings give: - (BLT-P910)
(1) More parallel paths. (2) Low current (3) High current (4) Both 1 & 3

Q.9. Wave (Series) windings are used for :- ((BLT-P910)
(1) High current. (2) Low Current (3) High Voltage (4) Both 2 & 3

Q.10. Wave (Series) windings are suitable for :- (BLT-P910)
(1) Small generators. (2) Large generators (3) Low voltage (4) Both 1 & 3

Q.11. Lap (II) Parallel windings generators are suitable for: - (AMTH-P10-136) (BLT-P910)
(1) Low current. (2) Low voltage (3) High current (4) Both 2 & 3

Q.12. Wave windings generators require: - (BLT-P910)
(1) More brushes. (2) 2- brushes (3) More parallel paths (4) Both 1 & 3

Q.13. Action of commutator makes a generator a: - (AMTH-P10-131)
(1) DC Generator. (2) AC Generator. (3) Alternator (4) Both 1 & 3

Q.14. MTCS respectively, If the current is taken from loop by ---- it is called Alternator and if current is collected from loop by------- it is called DC Generator:-
(1) Slip rings, Commutator. (2) Commutator, Slip ring. (3) Slip ring, Brush (4) Commutator, Brush (AMTH-P10-56)

Q.15. MTCS in DC generator, Brushes are place at such a position when the :- (BLT-P890)
(1) Plane of rotating coil is at right angle to the plane of Lines of flux. (2) Plane of rotating coil is at parallel to the plane of Lines of flux. (3) Plane of rotating coil is at 120 degree to the plane of Lines of flux (4) Plane of rotating coil is at 0 degree to the plane of Lines of flux

Q.16. In compound generator when series field aids the shunt field the generator is------- and if opposes the shunt field the generator is said to be--------. (BLT-P912)
(1) Differentially compounded, commutatively compounded. (2) Under compounded, commutatively compounded
(3) commutatively compounded differentially compounded. (4) Differentially compounded, over compounded

Q.17. When series field turns adjusted in such a way in compound wound generators, the rated voltage is greater than the No load Voltage the generators is said to be (BLT-P912 & AMTH-P10-140)
(1) Over compounded. (2) Under compounded. (3) Flat compounded (4) Differential Generator

Q.18. Field coils of DC Generators are made of: - (Grobs-10thEd-P579) & (AMTH-P10-)
(1) Soft Iron. (2) silicon steel (3) Copper. (4) Carbon

Q.19. In DC generator the Pole shoes are fastened to the Pole core by:- (BLT-P)
(1) Riveted. (2) counter sunk screw. (3) Nut & Bolts. (4) Welding

Q.20. Advantage of Brushless alternators are:- (Eismin-P220)
(1) Low maintenance cost Better performance at higher altitude since the sparking is absent as no brush or slip rings used. (2) Cheap and small size alternators (3) High stability and consistency in output since brush contact resistance is eliminated (4) Both 1 & 3.

Q.21. A 4 Pole generator rotates at 1500 rpm what will be induced EMF frequency in Hz:- (BLT-P)
(1) 50. (2) 60 (3) 6 (4) 5

Q.22. The Generators are rated by: - (AMTH-P)
(1) Capacity KW. (2) Power in Kilo Volt Ampere (3) Amperes at Rated voltage. (1) (4) Impedance at Rated voltage

Q.23. Pole pieces or shoes in Generators are a part of: - (BLT-P)
(1) Brush commutator assembly (2) Field coils assembly. (3) Armature assembly (4) Brush holders assembly

Q.24. Which of the DC generator is not used in Aircraft application:-
(1) AC Generator (2) Compound wound (3) Brushless alternator (4) Series wound.

Q.25. Armature reaction is proportional to: - (BLT-P)
(1) Strength of Field (2) No load voltage (3) Load current. (4) Speed of armature

Q.26. Mark the statement which is not true for Inter poles uses to: - (BLT-P)
(1) Reduce field strength. (2) Counter act the field distortion (3) Overcome Armature reaction (4) Reduce arching at brushes

Q.27. "Flashing the field" is done in a DC Generator to: - (Eismin-P206)
(1) Increase generator capacity (2) Remove excessive deposits from commutator and field winding (3) Restore correct polarity and residual magnetism to field poles. (4) Demagnetize the field and armature flux

Q.28. The Generator fails to show any No load voltage output even with correct rotation rpm and direction ,the probable cause for is: - (Eismin-P206)
(1) Loss of magnetic field strength (2) Reversed polarity of the residual magnetic field (3) Both 1 & 2. (4) Load not connected

Q.29. Differential compound generators are having same characteristics as that of :- (AMTH-P10-140)
(1) series wound (2) shunt wound (3) Constant current generator (4) Both 1 & 3 and used in arc welding process.

Q.30. The influence of series field coils determines the generator: - (AMTH-P10-140)
(1) degree of compounding (2) Change in terminal voltage with increasing or decreasing load (3) Both 1 & 2. (4) Speed of armature

Q.31. When compensating winding used along with inter poles we have to :- (AMTH-P10-137)
(1) Shift the brushes the new MNA to spark less commutation (2) Brush shifting is not required (3) Brush remains on GNA (4) Both 2 & 3.

Q.32. Compensating winding is connected :- (AMTH-P10-137)
(1) in Parallel to armature winding (2) In series with armature winding (3) Both 4 & 2. (4) Embedded in field pole slots

Q.33. In generator the inter poles winding are connected in:- (BLT-P950)
(1) Series with the armature winding (2) Parallel with the armature winding (3) Less Copper conductor turns with thick wire gauge (4) Both 1 & 3.

Q.34. In generators, Inter poles are: - (BLT-P950)
(1) Small poles fixed on yoke between main field poles (2) with similar Polarity of the main poles ahead in the direction of rotation (3) with opposite polarity of the main poles ahead in the direction of rotation (4) Both1 & 2.

Q.35. In generators the purpose of com-poles is to: - (BLT-P950)
(1) Create reverse EMF and to neutralize reactance EMF (2) reduce sparking at commutator (3) neutralize cross magnetizing effect of armature reaction (4) AOA.

Q.36. Armature reaction in Generator is due to the :- (Eismin-P194) & (BLT_P938)
(1) Armature current. (2) Field current (3) Both 1 & 2 (4) current in Copper field winding

Q.37. Magnetic neutral axis is the axis along which: - (BLT_P938)
(1) No induced EMF in armature conductor. (2) Max induced EMF in armature conductor (3) Medium EMF induced (4) AOA

Q.38. In series generators Terminal voltage : - (AMTH-P10-138)
(1) Falls with increase in load (2) Increases with increase in load. (3) Remains constant (4) Increases with decrease in load

Q.39. In parallel generators the Terminal voltage : - (AMTH-P10-139) & (BLT-P302)
(1) Falls with increase in load. (2) Increases with increase in load (3) remains constant (4) Increases with decrease in load resistances

Q.40. Terminal voltage of self excited DC Generators is equal to: - (AMTH-P10-139)
(1) Induced voltage plus the voltage drop (2) Induced voltage minus the voltage drop in armature (3) Induced voltage minus the voltage drop plus resistance of coils (4) NOA

Q.41. Magnetic neutral plane in generators is: - (Eismin-Ch10-P194)
(1) The position where the armature winding are moving parallel to magnetic flux lines. (2) The position where the armature winding are moving right angle to magnetic flux lines (3) Parallel to Polar axis (4) both 1 & 2 may be correct

Q.42. Compensating windings are used in Generator :- (Eismin-Ch10-P195)
(1) as independent to reduce power loss in small generators (2) Used along with interpoles to nullify armature reaction (3) Are embedded in the field poles (4) Both 2 & 3.

Q.43. Compensating winding & interpoles are used in Generator :- (Eismin-Ch10-P195)

(1) to reduce sparking at commutators & reduce voltage drop loss (2) Reduce radio interference (3) To improve efficiency of generator output (4) AOA.

Q.44. The DC Motors are rated as per : - (Eismin-P 175)
(1) Horse Power (2) Ampere Hour (3) Voltage (4) Current

Q.45. In aircraft The DC series Motors are used : - (Eismin-P 175)
(1) Engine starter (2) Landing gears (3) Flaps control (4) AOA

Q.46. The principle of operation of DC Motors is : - (Eismin-P 175)
(1) Magnetism (2) Electro Magnetic Induction (3) Both 1 & 2 (4) NOA

Q.47. The DC Motors use Right Hand Rule which states: - (Eismin-P 175)
(1) Thumb for Direction, index finger for Current and middle finger for Field (2) Thumb for Direction, index finger for Field and middle finger for Current (3) Thumb for Direction, index finger for Current and middle finger points North Pole (4) Thumb points North Pole, index finger for Current and middle finger for Field

Q.48. In DC Motors back EMF is produced in : - (Eismin-P 176)
(1) Armature (2) Stator field (3) Both 1 & 2 (4) No back emf in DC motors

Q.49. In DC Motors the : - (Eismin-P 177)
(1) Armature resistance is very high (2) Armature resistance is low (3) Back EMF is Low during start (4) Both 2 & 3

Q.50. Generally the DC Motors : - (Eismin-P 177)
(1) Must be started with resistance starter to limit the current (2) Can be started without the need of starter (3) Must not be started without mechanical load (4) NOA

Q.51. The DC series Motors has : - (Eismin-P 177)
(1) High starting torque (2) High starting speed (3) low starting current (4) AOA

Q.52. The DC series Motors needs to be : - (Eismin-P 177)
(1) Started with No load (2) Started with High Load (3) Avoid Run away condition (4) Both 2 & 3

Q.53. MTCS for the DC series Motors : - (Eismin-P 177)
(1) High starting current flows thru field and armature during the start (2) Low current flows thru field and armature during the start (3) 1 is correct and also leads to high starting torque (4) 1 & 2 is correct and results in Low starting torque

Q.54. MTCS for the DC shunt Motors: - (Eismin-P 177)
(1) Shunt field has high resistance (2) Counter EMF does not react with Field current (3) 1, 2 correct and Armature has low resistance (4) 1 & 2 only

Q.55. MTCS for the DC shunt Motors: - (Eismin-P 177)
(1) Has Low starting torque (2) High speed with low starting torque (3) Has Low speed with low starting torque
(4) 1 is correct having constant speed at varying loads

Q.56. DC shunt Motors is also called: - (Eismin-P 177)
(1) High starting torque motor (2) Constant speed motor (3) Power factor motor (4) Both 1 & 2

Q.57. MTCS for the DC compound wound Motors: - (Eismin-P 178)
(1) High starting torque with No load starting ease (2) Can runaway at no load (3) 1 is correct and Armature speed is constant as well (4) Both speed and Torque varies with change in load drastically

Q.58. MTCS for the DC reversible Motors: - (Eismin-P 180)
(1) Field has large size of conductor (2) Uses double pole switch and has double field winding (3) 1, 2 correct and used on landing gear or wing flaps operation (4) Both 1 & 2 and has low starting torque

Q.59. Most of the DC reversible Motors: - (Eismin-P 181)
(1) Uses disc brakes (2) May use magnetic clutch to engage or disengage mechanism from motor operation (3) 1, 2 correct but may use limit switches to cut off power to motor when limit is reached (4) NOA

Q.60. The Starter Generator: - (Eismin-P 197)
(1) Uses two series and shunt field winding (2) Has only one armature winding (3) 1 & 2 both are correct (4) 1 is correct and Has two set of armature winding

Q.61. MTCS for the Starter Generator: - (Eismin-P 197)
(1) Uses two set of winding series and shunt field (2) Series winding is used for starting (3) 1 is correct but both series ,shunt winding used during starting of engine (4) 1 & 2 are correct and series winding has low resistance

Q.62. MTCS for the Starter Generator: - (Eismin-P 197)
(1) Uses two set of winding series and shunt field (2) Shunt winding is used for generator mode (3) 1 is correct but both series, shunt winding used in Generator mode (4) 1 & 2 are correct and shunt winding has high resistance

Q.63. MTCS for the Starter Generator advantage: - (Eismin-P 198)
(1) Reduces Weight of aircraft (2) Size is compact thus saving on space (3) It is reliable and have high starting torque (4) 1 & 2 are correct

Q.64. The starter is used in DC motors : - ()
(1) To reduce the back EMF (2) Because it is not self starting (3) To limit the armature current during starting (4) Because it has high starting torque

Q.65. The series wound motor normally requires: - ()
(1) More current at high RPM (2) Low current at low RPM (3) More current at low RPM than high RPM (4) Same current at all RPM

Q.66. Some of DC motors uses two sets of field winding in reverse direction for: - (Eismin-P 197)
(1) Speed control in clockwise direction only (2) Operate motor in either direction (3) Torque controlling (4) Alternate use in case of failure of one winding

Q.67. Which of the DC motor has the Highest No- load speed: -
(1) Series (2) Shunt (3) Cumulative compound (4) Differentially compound

Q.68. In DC Motors back EMF is produced in : -
(1) Armature (2) Stator field (3) Both 1 & 2 (4) No back emf in DC motors

Q.69. One advantage of a DC motor over an AC motor is: -
(1). the direction of rotation of the rotor can be changed. (2). less voltage is required in DC than AC. (3). the DC motor will use less current.

Q.70. The shunt wound generator is normally started: -
(1). on load. (2). Either of the above. (3). off load.

Q.71. How many brushes are used in an 8 pole wave wound machine: -
(1). 6. (2). 8. (3). 2.

Q.72. If the supply voltage of a DC Motor is increased, which of the following will decrease: -
(1) Starting current and speed (2) Operating speed RPM (3) Starting torque (4) Full load current

Q.73. What is the main disadvantage of a starter generator?
(1). Heavier than like for like. (2). Will not supply output at low rpm. (3). Can only be used on piston engines.

Q.74. The output of Parallel generator can be controlled by using: -
(1) Resistance in series with armature winding (2) Resistance in series with field winding (3) Resistance in parallel with inter-pole winding (4) Resistance in parallel with field winding

Q.75. MTCS for the compound wound generators: -
(1) Uses series winding with less no of turns with thick wire and shunt coils of more turns with small wire conductor
(2) Uses series winding with more no of turns with thick wire and shunt coils of more turns with small wire conductor
(3) Uses series winding with more no of turns with thin wire and shunt coils of more turns with small wire conductor
(4) Uses series winding with less no of turns with thick wire and shunt coils of less turns with thick wire conductor

Q.76. MTCS for Under compounded generators: -
(1) When the output is equal to rated load as that of no load (2) When the rated load voltage is greater than the no load voltage (3) When the output is equal to rated load as that of full load (4) When the rated load voltage is less than the no load voltage

Q.77. When the flux density in the field of DC Generator increases along with an increase in the current flow to the system circuit the : - (AMTH-P 10-160)
(1) Generator voltage will decrease (2) The Generator will saturate and no output given (3) Force required in running the Generator will reduce (4) Force required in running the Generator will Increase

Q.78. In DC machine yoke offers: -
(1) mechanical protection to the machine (2) flux path completion (3) produce working flux (4) both A and B

Q.79. In a dc machine 72 number of coils are used. Find the number of commutator segments required?-
(1) 36 (2) 37 (3) 72 (4) 74

Q.80. In DC generators brushes are used for: -
(1) collecting of current without any sparking (2) collecting of voltage (3) reduce eddy current loss (4) convert ac armature current in to dc

Q.81. which of the following type of brush and their application is/are correct
(1) carbon brush → normal ratings (2) electro graphite → large ratings (3) copper graphite → low voltage high current density (4) all of the above

Q.82. Which of the following bearings and their uses are correct
(1) ball bearings → small machines (2) roller bearings → large machines (3) neither 1 nor 2 (4) both A and B

Q.83. Which of the following windings are necessary in case of all dc machines?
(1) closed winding (2) lap winding (3) wave winding (4) open type winding

Q.84. In a dc machine 4 pole lap winding is used. The number of parallel paths are?
(1) 2. (2) 4 (3) 1 (4) 8

Q.85. In a dc machine 6 pole wave winding is used. The number of parallel paths are?
(1) 6 (2) 4 (3) 2 (4) 1

Q.86. Inter pole winding is connected in---------- ?
(1) series with armature. (2) series with main poles (3) parallel with armature (4) parallel with main poles

Q.87. Lap winding is preferred for which type of machines?
(1) low current and low voltage. (2) high current and high voltage (3) high current and low voltage (4) low current and high voltage

Q.88. Wave winding is preferred for which of the following rating?
(1) low current and low voltage. (2) high current and high voltage (3) high current and low voltage
(4) low current and high voltage

Q.89. A 4-pole lap wound dc generator has 4 brushes, if one of the brush is damaged, what will be the change in V, I and P ratings
(1) V, I and P. (2) V/2, I/2 and P/4. (3) V/2, I and P/2. (4) V, I/2 and P/2

Q.90. For a dc machine shunt resistance and armature resistance values are
(1) high and high (2) high and low (3) low and low (4) low and high

Q.91. Shunt field of DC generators consists of--------number of turns and ---------- conductors respectively
(1) large and thick (2) large and thin (3) less and thick (4) less and thin

Q.92. Series field consists of--------number of turns and ---------- conductors respectively
(1) large and thick (2) large and thin (3) less and thick (4) less and thin

Q.93. What is/are the necessary conditions for voltage build up in self excited generator?
(1) Poles should contain residual flux. (2) Field winding should be properly connected to armature winding.
(3) Field winding resistance should be less than critical resistance. (4) All of the above

Q.94. No load saturation characteristics are plotted between
(1) no load voltage and field current (2) no load voltage and armature current (3) short circuit current and field current (4) short circuit current and armature current

Q.95. The effect of ---------- on main field flux is armature reaction?
(1) armature mmf (2) armature current (3) armature flux (4) AOA

Q.96. Armature flux is.....with respect to main field flux or main field poles?
(1) rotates opposite direction (2) rotates same direction (3) stationary (4) none of the above

Q.97. Cross magnetization effects which of the following?
(1) commutation. (2) reduction in main field flux (3) reduces the terminal voltage (4) both 2 and 3

Q.98. Demagnetization effects which of the following?
(1) commutation. (2) reduction in main field flux (3) reduces the terminal voltage (4) both B and C

Q.99. Brushes are always placed on---------- , in order to achieve sparkles commutation?
(1) GNA (2) MNA (3) either GNA or MNA (4) NOA

Q.100. Flux density under trailing pole tips in case of generator will
(1) increase. (2) decrease (3) either increase or decrease (4) NOA

Q.101. Flux density under leading pole tips in case of generator will
(1) increase. (2) decrease (3) either increase or decrease (4) none of the above

Q.102. Which of the following is/are effects of armature reaction?

(1) increase the iron loss. (2) increase the maintenance and repair
(3) increases the design cost. (4) all of the above.

Q.103. Which of the following is/are the methods to reduce the armature reaction and its effects?
(1) pole chamfering (2) pole stacking (3) compensating winding (4) AOA

Q.104. In DC machine torque depends on which of the following?
(1) flux (φ) (2) armature current (I) (3) both A and B (4) speed
$In\ DC\ machine\ Torque\ T \propto \varphi \times I$

Q.105. Compensating winding is placed in the
(1) pole shoe (2) armature core (3) main field (4) all of the above

Q.106. Direction of the current in the compensating winding is_____ to the direction of current in the armature conductors?
(1) same. (2) exactly opposite (3) either of these (4) NOA

Q.107. The speed of a d. c series motor at no load is:-
a) Zero b) Infinity c) Q00 r. p. m

Q.108. The direction of rotation of a dc series motor can be reversed
a) by interchanging the supply terminals b) by interchanging the field terminals c) either a) or b) .

Q.109. A dc shunt generator driven at normal speed in the normal direction fails to build up armature voltage because
a) the armature resistance is high b) the field current is not sufficiently high c) there is no residual magnetism.

Q.110. If a dc motor is connected across an ac supply , the dc motor will
a) burn as the eddy currents in the field produce heat b) run at its normal speed c) run at a lower speed

Q.111. What would happen if the field of dc shunt motors is opened?
a) the speed of the motor will be reduced b) it will run at its normal speed c) the speed will be enormously high , and the motor will destroy itself.

Q.112. Which one of the following motors is used in a locomotive?
a) Induction motor b) dc series motor c) Synchronous motor

Q.113. The dummy coil in the dc machine is used to
a) eliminate armature reaction b) bring about mechanical balance of armature c) eliminate reactance voltage

Q.114. The sparking at the brushes in a dc generator is attributed to
a) quick reversal of current in the coil under commutation b) armature reaction c) reactance voltage

Q.115. Inter poles in the armature of a dc generator are used to
a) neutralize the reactance voltage b) neutralize the reactance voltage and the cross-magnetizing effect of the armature reaction c) neutralize the cross-magnetizing effect of the armature reaction

Q.116. In series –parallel control method when two dc series motors are connected in series , the speed of the set is

a) half of the speed of he motors when connected in parallel b) ¼ th of the speed of the motors when connected in parallel c) same as in parallel.

Q.117. The armature torque of the dc shunt motor is proportional to
a) armature current only b) field flux only c) armature current and flux both

Q.118. The reversal of speed of motors used as electric braking is known as
a) regenerative braking b) plugging c) dynamic braking.

Q.119. The method used for braking in rolling mills is
a) plugging b) regenerative braking c) dynamic braking

Q.120. The yoke of a DC machine is generally made of
(a) carbon (b) soft iron (c) cast steel (d) silicon steel

Q.121. Number of magnetic circuits in a four pole DC machine are
(a) one (b) two (c) four (d) eight

Q.122. In a DC Machine, the current flow in a armature circuit is
(a) AC (b) pulsating DC (c) pure DC (d) none of the above

Q.123. The number of commutator segments in a DC machine is equal to
(a) number of poles (b) number of conductors (c) number of coils
(d) number of turns

Q.124. As the armature reaction effect increases, the main flux of DC machine is
(a) decreases (b) increases (c) remain same (d) none of the above

Q.125. In DC machines, slot wedges are generally made of
(a) silicon steel (b) fibre (c) impregnated paper (d) cotton

Q.126. In which part of DC machine the eddy current loss is maximum
(a) yoke (b) field pole (c) air gap (d) armature

Q.127. In order to reduce the size of DC generator, the magnetic material must have
(a) high permeability (b) low permeability (c) high resistance (d) high reluctance

Q.128. In DC machine, the teeth in the armature are sometime skewed in order to reduce
(a) copper losses (b) iron losses (c) magnetic locking (d) vibration

Q.129. In DC machines if the resistance of carbon brushes increases, the sparking at the brushes
(a) increases (b) decreases (c) remains same (d) none of the above

Q.130. In a DC machine, the sparking at the brushes is due to
(a) low contact resistance (b) reactance voltage (c) armature reaction
(d) over excitation

Q.131. When the field excitation of a DC generator increases, its generated emf
(a) decreases (b) increases (c) remain same (d) first increases then constant

Q.132. The field coil of a DC machine are usually made of
(a) copper (b) aluminum (c) carbon (d) mica

Q.133. Then insulating material used between commutator segment is generally
(a) paper (b) mica (c) plastic (d) fibre

Q.134. The function of dummy coils in DC machines is to
(a) reduce armature reaction (b) provide alternate flux (c) reduce losses (d) provide mechanical balancing

Q.135. The purpose of using dummy coil in a DC machine is to
(a) reduce losses (b) reduce armature reaction (c) provide mechanical balance to armature
(d) improve power factor

Q.136. The rotor part of a DC machine carries
(a) armature winding (b) field winding (c) either field or armature winding
(d) NOA

Q.137. If a field winding designed for series connection is connected in parallel, the machine will
(a) draw very high current (b) stand still (c) run normally (d) run at slow speed

Q.138. In the commutative compound machine, the mmf of the series field winding will _____ to the mmf of the shunt field winding.
(a) add (b) minus (c) same (d) half

Q.139. Which is the basic dominant factor in the production of the magnetic flux in a compound machine?
(a) Shunt field mmf (b) Series field mmf (c) Both shunt and series field mmf (d) NOA

Q.140. The principle of dynamically induced emf is used in
(a) generator (b) battery (c) transformer (d) all of the above

Q.141. A dummy coil may required in a DC machine, if the machine is
(a) lap wound (b) wave wound (c) either lap or wave wound (d) none of the above

Q.142. Which of the following is main factor to determine the size and rating of and electric machine?
(a) Current (b) Temperature (c) Speed (d) Voltage

Q.143. Which of the following motor has the poorest speed regulation?
a) Shunt motor b) Series motor c) Differential compound motor d) Cumulative compound motor

Q.144. DC motor is to drive a load which is having certain minimum value for most of the time and some peak value for short duration. We will select the _____
a) Series motor b) Shunt motor c) Compound motor d) Cannot be determined

Q.145. Which motor should not be started on no-load?
a) DC Series motor b) DC Shunt motor c) Synchronous motor d) Induction motor

Q.146. Torque of e DC series motor is _____
a) Directly proportional to armature current b) Inversely proportional to armature current c) Directly proportional to square of armature current d) Inversely proportional to square of armature current

Q.147. What will happen to a torque, if a DC series motor is accidentally connected to single phase ac supply voltage?
a) Pulsating and unidirectional b) Steady and unidirectional c) Oscillating d) Cannot be determined

Q.148. Which DC motor is more preferred for elevators?
a) Shunt motor b) Series motor c) Differential compound motor d) Cumulative compound motor

Q.149. Which DC motor has got maximum self-loading property?
a) Series motor b) Shunt motor c) Cumulative compound motor d) Differential compound motor

Q.150. For the same H.P. rating and full load speed, which of the following motor has poor starting torque?
a) Series motor b) Shunt motor c) Cumulative compound motor d) Differential compound motor

Q.151. What will happen if shunt field suddenly opens, in a differential compound DC motor?
a) Motor will first stop and then run in opposite direction as series motor b) Motor will not work and come to stop
c) Motor will work as series motor and run at infinitely high speed d) Motor will work as series motor and run at slow speed
(Answer: a
Explanation: If shunt field is suddenly opened, flux due to shunt field will become 0. As, net flux is equal to shunt field flux – series field flux, the direction of flux will be reversed and thus motor will run in opposite directions.)

Q.152. What will happen if the series field of a differential compound motor is short circuited?
a) Net flux will decrease b) Speed will increase c) Speed will remain constant d) Speed will decrease

(Answer: d
Explanation: As the series field is short circuited, current through series field becomes zero and MMF due to series field becomes zero. Hence, net MMF in motor becomes greater than previous case, which results in total increase in the flux created and decrease in speed.)

Q.153. What will happen if the series field of a cumulative compound motor is short circuited?
a) Net flux will increase b) Speed will increase c) Speed will remain constant d) Speed will decrease

(Answer: b
Explanation: As the series field is short circuited now, current through series field becomes zero and MMF due to series field becomes zero. Hence, total MMF in motor becomes less than previous case, which results in total decrease in the flux created and increase in speed.)

Q.154. With increase in armature current, speed of the cumulative compound motor _____
a) Reduces slowly compare to shunt motor b) Reduces sharply compare to shunt motor c) Remains constant d) Increases in proportionality with armature current

Q.155. Only motor listed below whose speed increases with increase in armature current is _____
a) DC series motor b) DC cumulative compound motor c) DC shunt motor d) DC differential compound motor

(Answer: d
Explanation: Shunt motor speed though decreases by slight value as armature current increases, it is assumed to be constant. But series motor and cumulative motor speed decreases as armature current increases. Only differential motor flux reduces with increase in armature current thus, speed increases.)

Q.156. Which of the following DC motor has negative speed regulation?
a) Shunt motors b) Series motors c) Differential compound motors d) Series and differential compound motors

(Answer: c
Explanation: In differential compound motors flux will reduce as load is increased because series flux opposes shunt field flux. This will increase speed upon addition of load. Therefore, it has negative speed regulation means speed will increase due to increase in load.)

Q.157. What will happen if DC shunt motor is connected across AC supply?
a) Will run at normal speed b) Will not run c) Will Run at lower speed d) Burn due to heat produced in the field winding

Q.158. What will happen if the back emf of a DC motor vanishes suddenly?
a) The motor will stop b) The motor will continue to run c) The armature may burn d) The motor will run noisy

Q.159. What will happen, with the increase in speed of a DC motor?
a) Back emf increase but line current falls. b) Back emf falls and line current increase. c) Both back emf as well as line current increase. d) Both back emf as well as line current fall.

Q.160. In DC motor, which of the following part can sustain the maximum temperature rise?
a) Field winding b) Commutator c) Slip rings d) Armature winding

Q.161. Direction of rotation of motor is determined by _____
a) Faraday's law b) Lenz's law c) Coulomb's law d) Fleming's left-hand rule

Q.162. The current drawn by the armature of DC motor is directly proportional to _____
a) Torque b) Speed c) The voltage across the terminals d) Cannot be determined

Q.163. Which of the following quantity will decrease in DC Machine if supply voltage is increased?
a) Starting torque b) Operating speed c) Full-load current d) Cannot be determined

Q.164. In which of the following case we will get maximum power?
a) E_a = 2 x supply voltage b) E_a = supply voltage c) Supply voltage = 2 x E_a d) supply voltage = 4 x E_a

Q.165. In DC machines the residual magnetism is present. The order of residual magnetism is _____
a) 2 to 3 per cent b) 10 to 15 per cent c) 20 to 25 per cent d) 50 to 75 per cent

Q.166. If the flux per pole of a shunt-wound DC generator is increased, and all other variables are kept the same, the speed
(a) decreases (b) stays the same (c) increases (d) None of the above

Q.167. If the speed of a DC machine is doubled and the flux remains constant, the generated e.m.f.
(a) remains the same (b) is doubled (c) is halved (d) None of the above

Q.168. If the flux per pole of a shunt-wound DC generator is halved, the generated e.m.f. at constant speed
(a) is doubled (b) is halved (c) remains the same (d) None of the above

Q.169. Which of the following statements is false for a series-wound DC motor?
(a) The speed decreases with increase of resistance in the armature circuit (b) The speed increases as the flux decreases (c) The speed can be controlled by a diverter (d) The speed can be controlled by a shunt field regulator

Q.170. The armature resistance of a DC motor is 0.5 , the supply voltage is 200V and the back e.m.f. is 196V at full speed. The armature current is:
(a) 4A (b) 8A (c) 400A (d) 392A

Q.171. In DC generators iron losses are made up of:
(a) hysteresis and friction losses (b) hysteresis, eddy current and brush contact losses (c) hysteresis

and eddy current losses (d) hysteresis, eddy current and copper losses

Q.172. The effect of inserting a resistance in series with the field winding of a shunt motor is to:
(a) increase the magnetic field (b) increase the speed of the motor (c) decrease the armature current
(d) reduce the speed of the motor

Q.173. In dc machines the number of poles is generally decided by

(A) frequency of flux reversals (B) weight of iron parts (C) weight of copper (D) all of the above.

Q.174. In dc machines by increasing the number of poles, all of the following reduce except:

(A) weight of copper (B) weight of iron parts (C) frequency of flux reversals (D) overall size of the machine.

Q.175. Iron losses of a machine are

(A) directly proportional to flux density (B) directly proportional to the square of flux density
(C) inversely proportional to flux density (D) inversely proportional to the square of flux density.

Q.176. The shaft of electric motors is generally made of

(A) mild steel (B) cast iron (C) copper (D) aluminum alloy.

Q.177. The current drawn by a 220 V dc motor of armature resistance 0.5 ohms and back emf 200 V is
a) 40 A b) 44 A c) 400 A d) 440 A

Q.178. The current drawn by a 120 V dc motor with back emf of 110 V and armature resistance of 0.4 ohms is
a) 4 A b) 25 A c) 275 A d) 300 A

Q.179. With the increase in speed of a dc motor
a) both back emf as well as line current increase b) both back emf as well as line current fall c) back emf increases but line current falls d) back emf falls and line current increases

Q.180. If the back emf in a dc motor vanishes suddenly, the motor will
a) start hunting b) burn c) run at very high-speed d) run at very slow speed

Q.181. Which of the DC motor has the Highest No- load speed: -
(1) Series (2) Shunt (3) Cumulative compound (4) Differentially compound

Q.182. In DC Motors back EMF is produced in : -
(1) Armature (2) Stator field (3) Both 1 & 2 (4) No back emf in DC motors

Q.183. MTCS for the DC series Motors: -

(1) High starting current flows thru field and armature during the start (2) Low current flows thru field and armature during the start (3) 1 is correct and also leads to high starting torque (4) 1 & 2 is correct and results in Low starting torque

Q.184. The Starter Generator: -
(1) Uses two different series and shunt field winding (2) Has only one armature winding (3) 1 & 2 both are correct
(4) 1 is correct and Has two set of armature winding as well

Q.185. The DC Series wound motor generally requires: -
(1) More current at high RPM than Low RPM (2) More current at Low RPM than High RPM (3) Same current at all RPM level (4) NOA

Q.186. If the supply voltage of a DC Motor is increased, which of the following will decrease: -
(1) Starting current and speed (2) Operating speed RPM (3) Starting torque (4) Full load current

Q.187. The Flashing of Field is done in a Generator in order to: -
(1) Increase the Generator capacity (2) Remove Magnetic effect and excessive deposits of carbon (3) Restore correct polarity and residual magnetism of field poles (4) De-magnetize the rotor and restore proper resistance of field winding

Q.188. When the flux density in the field of DC Generator increases along with an increase in the current flow to the system circuit the : - (AMTH-P 10-160)
(1) Generator voltage will decrease (2) The Generator will saturate and no output given (3) Force required in running the Generator will reduce (4) Force required in running the Generator will Increase

Q.189. Radio interference in a generator is reduced by filter suppressor such as: -
(1) High L, Low R connected in series and capacitor to earth (2) High R, Low L connected in series and capacitor to earth
(3) High R, High Z and capacitor in series (4) High R, Low L and capacitor in series

Q.190. Load on DC shunt generator increases the speed of motor decreases due to:

(a) Increase back emf (b) Reduce the field current (c) current increase in armature

Q.191. Which generator is poor voltage regulator: -

(a) series wound generator (b) shunt wound generator (c) compound wound generator

Q.192. Generator voltage depends on: -

a) strength of magnetic field b) speed of rotation of conductor c) no. of turns of conductor d) only (a) & (b) are correct

Q.193. Self-excited generator has:

a) Permanent generator b) Separate DC source c) Electromagnetic coil which is magnetized by machines current itself d) All

Q.194. Series D.C. motor: -

a) Poor voltage reputation b) Field winding made of few turn of heavy wire c) High starting Torque (principal advantage) d) Both (a) & (b)

Q.195. Speed of motor increases when load current decrease because of: -

a) frictional loss between motor's moving part b) frictional loss between winding & other parts c) induced back emf increases

Q.196. Principle of voltage regulation: -

(a) Vibrator type (b) Carbon pile (c) solid state type (d) All

Q.197. DC power required generator in aircraft is

(a) Permanent magnet type (b) separately excited (c) self-excited series type (d) self-excited shunt type

Q.198. Voltage regulator provide

(a) Fluctuating voltage (b) constant voltage (c) sinusoidal voltage (d) All

Q.199. Decreasing the field current in a shunt motor will: -
(1). decrease speed and increase torque. (2). increase speed and increase torque. (3). increase speed and decrease torque.

Q.200. In a shunt motor, if you reverse both field current and the armature current, the motor will: -
(1). stop. (2). change direction. (3). continue to run in the same direction.

Q.201. A starter generator has a: -
(1). low resistance series field and a low resistance shunt field. (2). low resistance series field and a high resistance shunt field. (3). high resistance series field and a low resistance shunt field.

Q.202. If the brake coil on an actuator motor goes open circuit, the actuator will: -
(1). run slower. (2). stop. (3). over-ride its mechanical stops

Q.203. If a generator speed is halved and the field strength is doubled, the voltage output will be: -
(1). unchanged. (2). doubled. (3). halved.

Q.204. How can the direction of rotation of a DC electric motor be changed?
(1). reverse the electrical connections to either the field or armature windings. (2). rotate the positive brush one commutator segment. (3). interchange the wires which connect the motor to the external power source

Q.205. The only practical method of maintaining a constant voltage output from an aircraft generator under varying conditions of speed and load is to vary the: -
(1). speed at which the armature rotates. (2). strength of the magnetic field. (3). number of conductors in the armature.

Q.206. If a heavy mechanical load is removed from a series motor: -
(1). the speed will increase and the armature current will increase. (2). the speed will increase and the armature current will decrease. (3). the speed will decrease and the armature current will decrease.

Q.207. If the correct supply were connected to a DC shunt motor which had lost its residual magnetism it would; -
(1). run in the reverse direction. (2). fail to run. (3). run normally.

Q.208. One purpose of a growler test is to determine the presence of: -
(1). a shorted armature. (2). a broken field leads. (3). an out-of-round commutator.

Q.209. If the field strength of a generator is doubled, and the speed is doubled, the output EMF will: -
(1). stay the same. (2). double. (3). quadruple.

Q.210. Doubling the running time of an electrical machine would: -
(1). double the current used. (2). double the joules used. (3). double the watts used.

Q.211. As the generator load is increased (within its rated capacity), the voltage will.
(1). remain constant and the amperage output will decrease. (2). decrease and the amperage output will increase.
(3). remain constant and the amperage output will increase.

Q.212. Which of the following is not one of the purposes of inter poles in a generator?
(1). Overcome armature reaction. (2). Reduce arcing at the brushes. (3). Reduce field strength.

Q.213. To reverse the direction of a series motor: -
(1). the direction of the current through the field and the armature is reversed. (2). the direction of the current through the field is reversed. (3). a second series field is fitted.

Q.214. The current consumed by a DC starter motor will: -
(1). remain relatively constant over the starting speed range. (2). decrease as the engine speed increases. (1). increase as the engine speed increases.

Q.215. Some electric motors have two sets of field winding wound in opposite directions so that the: -
(1). speed of the motor can be more closely controlled. (2). motor can be operated in either direction. (3). power output of the motor can be more closely controlled.

Q.216. If the field current to a shunt wound DC motor is decreased when operating at a constant load, the motor speed will. Option A. reduce. Option B. not change. Option C. increase.

Q.217. In a wave wound generator with 4 poles, what would be the minimum number of brushes?
(1). 4. (2). 2. (3). 8.

Q.218. In a DC motor, back-EMF rises if the motor: -
(1). speed falls. (2). speed falls Load rises. (3). speed rises.

Q.219. A DC generator armature has 6 poles and is lap wound. The number of brushes required are: -
(1). 2. (2). 3. (3). 6.

Q.220. The back-EMF in a DC motor is: -
(1). equal to the applied EMF. (2). less than the applied EMF. (3). greater than the applied EMF.

Q.221. A DC shunt motor has 28 volts applied. The current taken from the armature of 2 ohms resistance is 1 amp. The Back EMF is: -
(1). 26 V. (2). 30 V. (3). 27 V.

Q.220. To increase the voltage output of a generator you can: -
(1). decrease speed. (2). It is not speed dependent. (3). increase speed.

Q.221. Generator voltage is: -
(1). dependent on speed of rotation. (2). independent of speed of rotation. (3). not dependent on speed of rotation.