

1. A DC generator converts _____ energy to _____ energy.
 - (a) electrical, mechanical
 - (b) electrical, electrical
 - (c) chemical, electrical
 - (d) mechanical, electrical

2. The principle by which emf's are generated in a DC generator is:
 - (a) electromagnetic induction.
 - (b) Lenz's law .
 - (c) self inductance.
 - (d) chemical reaction.

3. The function of the commutator in a DC generator is to:
 - (a) connect the AC generated in the windings directly to an external circuit.
 - (b) convert the AC generated in the windings to DC when connecting to an external circuit.
 - (c) supply an external current to the armature to drive the generator.
 - (d) allow the generator to be converted to a motor.

4. The windings for the magnetic field system are mounted on the:
 - (a) Armature.
 - (b) Commutator.
 - (c) Frame.
 - (d) Pole cores.

5. The value of the generated emf's in the armature conductors is _____ to the field flux, and _____ to the armature speed.
 - (a) Proportional, proportional
 - (b) Proportional, inversely proportional
 - (c) inversely Proportional, proportional
 - (d) inversely Proportional, inversely proportional

6. To increase the output of a generator you could either _____ the field current or _____ the armature speed.
 - (a) decrease, decrease
 - (b) increase, decrease
 - (c) increase, increase
 - (d) decrease, increase

7. The relationship between current, magnetic flux and the force applied to a conductor within a generator can be determined by:
 - (a) Fleming's right hand rule.
 - (b) Fleming's left hand rule.
 - (c) Faraday's right hand rule.
 - (d) Faraday's left hand rule.

Section B:

8. A single conductor of 150mm length is rotated through a field flux of 0.8T at a velocity of 10m/s. Determine the emf induced in the conductor. (1.2V)

9. Determine the flux density of the magnetic field required to generate 12.6V in a conductor with an effective length of 2m which moves through the magnetic field at 90° with a uniform velocity of 10.5m/s. (0.6T)

10. A generator is wound with 6 series connected coils, each wound with 40 turns. If the length of the armature is 200mm, the density of the flux is 1.25 Tesla and the armature rotates with a velocity of 2m/s, determine the generated output voltage of the generator. (240V)

1. A self-excited shunt generator relies on _____ for its initial magnetic flux.
 - (a) Separate excitation
 - (b) Residual magnetism
 - (c) Field flashing
 - (d) Good luck

2. The generator type which is used for certain welding applications would be a _____ type.
 - (a) Differentially compounded
 - (b) cumulatively compounded
 - (c) shunt
 - (d) Series

Differential Compound Generators are used for arc welding because of their drooping characteristics. The generator used for welding purposes should have high current and low voltage which can be obtained by the differential compound generato

Section B

3. A separately excited generator has an effective flux of 8mWb and is operated at a speed of 292 rpm . If the machine constant is 12 , determine the:
 - (a) generated voltage; (28V)
 - (b) no-load terminal voltage. (28V)