

Automotive Electrical and Engine Performance 9th Edition
Chapter 15 – Charging System Parts and Operation
Multiple Choice Questions Quiz B

1. What is the primary purpose of the diodes in an alternator?
 - a) To rectify AC into DC
 - b) To increase voltage
 - c) To store electrical energy
 - d) To prevent overheating

2. Which component in the alternator creates the magnetic field?
 - a) Stator
 - b) Diode rectifier
 - c) Rotor
 - d) Voltage regulator

3. What is the purpose of the overrunning alternator pulley (OAP)?
 - a) To enhance power generation during low RPMs
 - b) To improve the alternator's cooling efficiency
 - c) To regulate the alternator's maximum output
 - d) To reduce noise and vibration in the belt system

4. What is the main difference between a wye-connected stator and a delta-connected stator?
 - a) A wye connection is for high-speed performance, while delta is for low speed
 - b) A wye connection provides more current at low speeds
 - c) A delta connection is always more efficient than wye
 - d) A delta connection provides more consistent output at all speeds

5. What determines the amount of voltage output from an alternator?

- a) The speed of rotation, the strength of the magnetic field, and the number of conductors
- b) The type of alternator housing material
- c) The resistance in the battery
- d) The temperature of the stator windings

6. How is the heat produced by an alternator regulated?

- a) By the voltage regulator
- b) By the alternator housing material
- c) By external and internal fans or coolant
- d) By reducing the load on the diodes

7. What is the role of the slip rings in an alternator?

- a) To increase current flow
- b) To transmit field current to the rotor
- c) To convert AC to DC
- d) To stabilize the rotor's speed

8. What is the function of the diode trio in some alternators?

- a) To provide direct current to the voltage regulator
- b) To convert all AC to DC in the stator windings
- c) To cool the stator windings
- d) To connect the alternator output directly to the battery

9. How does the voltage regulator control alternator output?

- a) By increasing the current flow through the stator windings
- b) By cycling the field current on and off
- c) By adjusting the rotation speed of the rotor
- d) By controlling the rectifier diodes' polarity

10. What advantage does a computer-controlled alternator system provide?

- a) It increases engine performance by disconnecting the alternator during high loads
- b) It ensures the alternator operates at maximum output at all times
- c) It improves fuel efficiency and regulates charging based on load
- d) It allows for manual adjustment of alternator settings via a diagnostic tool

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Correct Answers:

1. a
2. c
3. d
4. b
5. a
6. c
7. b
8. a
9. b
10. c