

Automotive Technology 7th Edition
Chapter 43: Capacitance and Capacitors
Short Answer Quiz

Name:

Date:

1. Describe the discovery of capacitance by Ewald Christian von Kleist and Pieter Van Musschenbroek. What device did they use for their experimentation?

2. Explain the significance of John Bevis's modification to the Leyden jar in 1747. How did it enhance the design?

3. Detail the construction of a capacitor. What is the role of the dielectric, and what materials can serve as a dielectric?

4. How does the operation of a capacitor differ when placed in a closed circuit versus when it's in an open circuit?

5. Discuss the three primary factors governing capacitance. How does each factor influence the capacitance of a capacitor?

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6. In the context of electronic circuits, how are capacitors utilized as timers? What determines the time it takes for a capacitor to discharge in such circuits?

7. Describe the role of capacitors in computer memory, specifically in dynamic random-access memory (DRAM) chips. How do charged and discharged capacitors represent binary digits?

8. Capacitance is measured in farads, named after Michael Faraday. Define a farad in terms of coulombs and voltage.

9. Explain the use of capacitors in spike suppression. How do they protect other electronic devices from voltage spikes?

10. How are capacitors utilized in noise filtering, especially in sound systems or radios?