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?

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

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

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

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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?

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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?

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

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

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

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