

Automotive Technology 7<sup>th</sup> Edition  
Chapter 53: Lighting and Signaling Circuits  
Short Answer Quiz

Name:

Date:

1. Describe the process and importance of handling a halogen bulb by its base. What potential issues can arise if not handled correctly?
2. Explain the phenomenon that causes the bulb covering of composite headlights to fade, turn yellow, and discolor over time. What environmental factors exacerbate this issue?
3. Detail the operational differences between high-intensity discharge (HID) headlights and traditional halogen headlights. How do HID lamps produce light?
4. Discuss the significance of the color of light in terms of Kelvin degrees. How does the color temperature of a light source affect its appearance?
5. Describe the principle behind the operation of an LED. How does it emit light, and what is the role of the P-N junction?

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6. Explain the function and purpose of the smart junction box (SJB) in relation to the multifunction switch and the headlight switch.

7. What are the potential causes for all headlights being inoperative in a vehicle? List the diagnostic steps to identify the root cause.

8. Describe the "Troxler effect" mentioned in the document. How do auto-dimming mirrors help in preventing this effect?

9. Explain the conditions under which an auto-dimming headlight system operates. What triggers the system to activate?

10. Discuss the advantages of using LED lights in automotive applications. How do they compare to traditional lighting systems in terms of performance and efficiency?