

Name \_\_\_\_\_

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

1) What are three methods used to prevent the evaporator from becoming too cold and freezing?

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2) What is the purpose and function of the low-pressure and high-pressure switches?

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3) Why is a desiccant needed in automotive air-conditioning systems?

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4) How does the air-conditioning system removes moisture from the air?

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5) What is the operation of the typical automotive air-conditioning system?

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## Answer Key

Testname: SHORT 63

- 1) Cycling clutch, thermo expansion valve, or POA systems are all methods used to prevent evaporator freeze up.  
Page Ref: 756
- 2) • Low-pressure switch: This pressure switch is electrically closed only if there is at least 25 PSI of refrigerant pressure. This amount of pressure means that the system is sufficiently charged to provide lubrication for the compressor.  
• High-pressure switch: This pressure switch is located in the high-pressure side of the air-conditioning system. If the pressure exceeds a certain level (typically 375 PSI [2,600 kPa]), the pressure switch opens, thereby preventing possible damage to the air-conditioning system due to excessively high pressure.  
Page Ref: 768-769
- 3) Desiccant is used to remove any moisture that may get into the system.  
Page Ref: 761
- 4) The humid air is exposed to the cool evaporator and the moisture in the air is removed by condensation.  
Page Ref: 760
- 5) Liquid high-pressure refrigerant is allowed to expand through an orifice or expansion valve when the pressure and the temperature drops inside the evaporator. The evaporator absorbs heat from inside of the vehicle during the process of evaporation.  
Page Ref: 753-755