

CH 105 Supplemental Instruction

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Sessions: Monday, 1:20-2:20, EB 132

Wednesday, 1:20-2:20, EB 132

Office Hour: Friday, 1:20-2:20, CTL 241C (Academic Success Center)

Part 1:

1. Describe the type of energy exhibited by the following:
 - A rock stationary at the top of a hill
 - A car on the highway
 - Gasoline
 - Airplane noise
 - Electricity
2. Convert the following to Kelvins:
 - 19 °C
 - 100 °F
3. The specific heat of Object A is 3.91 J/g°C whereas the specific heat of Object B is 2.2 J/g°C. Assuming both objects are at room temperature, which object will heat up faster when the heater is turned on?
4. List the three states of matter from lowest to highest in energy.
5. Define a physical change and provide an example.
6. Define a chemical change and provide an example.
7. Determine if each of the following are physical or chemical changes:
 - Wood burning
 - Ice melting
 - Creating a mixture of tea
 - A solution changes from blue to colorless
 - The rusting of a penny

8. What type of phase change are the following?

- Water to steam
- Ice to Water
- Dry ice to CO_2 gas
- Gas to Solid

9. Draw a phase diagram for ice to steam.

10. Calculate how much energy is required to convert 50 g of ice at -25°C to steam at 110°C . (heat of fusion for water is 80 cal/g ; heat of vaporization for water is 540 cal/g ; specific heat for ice is $.5\text{ cal/g }^\circ\text{C}$; specific heat of water is $1\text{ cal/g }^\circ\text{C}$; specific heat of steam is $.45\text{ cal/g }^\circ\text{C}$)