**Wave Interactions** (p. 524 – 529)

**I. Reflection, Diffraction, & Refraction**

 **1. List three ways that waves normally move from a source.**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2. Define the term reflection.**

 Reflection –

 **3. When does reflection occur?**

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 **4.** **Define the term diffraction.**

 Diffraction –

 **5. What wave situations produce diffraction?**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **6. A wave diffracts more if its wavelength is large compared to the opening or obstacle.**

 Circle One : True False

 **7. Why can a person hear something in a room before being in the room?**

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 **8. Define the term refraction.**

 Refraction –

 **9. Why does refraction occur when a wave enters a new medium at an angle?**

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 **10. Refraction always involves a change in the speed and direction of a wave.**

 Circle One : True False

**II. Interference**

 **1.** **Define the term interference.**

 Interference –

 **2. What types of wave alignments occur during the following forms of interference?**

 Constructive = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Destructive = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **3. What happens to the amplitude and loudness of the following forms of interference?**

 Amplitude Loudness

 Constructive (Circle One) : Larger Smaller Increases Decreases

 Destructive (Circle One) : Larger Smaller Increases Decreases

 **4. What is produced when light waves exhibit interference?**

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **5.** **Define the term beats.**

 Beats –

 **6. What produces the pulsating variations when beat loudness :**

 Increases = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Decreases = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **7. How are instrument beats avoided in orchestras?**

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**III. Standing Waves**

 **1.** **Define the term standing wave.**

 Standing Wave –

 **2. Circle the type of interference that occurs at each wave site.**

 Nodes : Constructive Destructive

 Anti-nodes : Constructive Destructive

 **3. List three types of instruments that produce standing waves.** *(Not in the book.)*

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_