GNSC 1110L LAB PRE-TEST QUESTIONS

STANDING WAVES ON A STRING

1. What is the objective of this experiment?

2. The velocity, v, of a transverse wave on a stretched string depends on the tension, F, in the string and the mass per unit length μ Write down the equation that describes the relationship. Give the SI units for each symbol.

3. What does each symbol represent and what are their SI units?

$$v = f\,l$$

4. Draw a simple sketch to show what a wavelength is.

5. Draw a standing wave pattern with 5 loops (segments). Indicate what nodes and anti-nodes are. Explain how to find the wavelength.

6. Frequency, f, is usually given with the unit of Hz. What is Hz?

7. How many nodes are there for a standing wave with 7 loops?

8. If the total mass hanging down from the end of the string is 255 g, what is the tension in the string?

9. For question #8 above, if the mass per unit length is 5.43×10^{-4} kg/m, find the wave velocity in the string in m/s.

10 Calculate the velocity in m/s of a wave having a frequency of 120 Hz and a wavelength of 40.0 cm.

11. Draw a simple sketch of a standing wave. Label nodes, anti-nodes and loops.

12. What is a standing wave?

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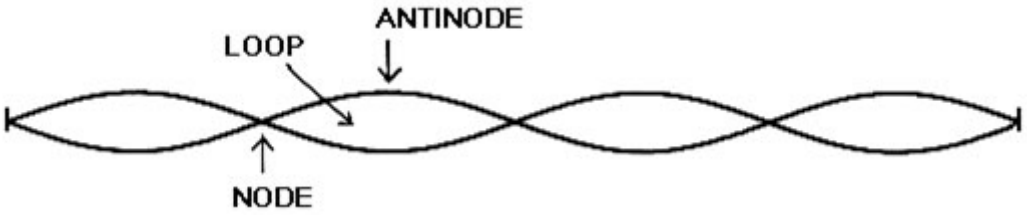
8. 255g = 0.255Kg Tension is a force. Using Newton's second law.

F= ma = 0.255Kg X 9.80 m/s^2 = 2.5N

10. v = f l = 120 Hz X 0.40m = 48.0 m/s

11.



12. A wave phenomenon resulting from the INTERFERENCE of two waves {SOUND WAVES for example} of the same frequency and kind travelling in opposite directions.