Blitz, Chapters 12 & 13, Form A-C

Name _____ Period ____

This is a Take Home Exam. You may use your notes but you may NOT use help from human beings.

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:

You MUST HAND WRITE THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!

1. Compare transverse and longitudinal waves and give their parts.

2. Illustrate the superposition of two waves and the beat frequency.

3. Discuss the meaning and cause of the Doppler Effect.

4. Discuss harmonics, and show the waves in open and closed tube resonators.

5. Illustrate two types of organ pipes and tell how they produce sound.

***** SHOW METHOD OF SOLUTION FOR ALL PROBLEMS (The 1,2,3,4!)**

6. Find the speed of a wave whose frequency is 52.8 hz and whose wavelength is 4.20 m.

7. Find the distance to a thunder clap when the time for the sound to arrive is 18.0s at 14^{o}C.

8. Find the wavelength of a sound whose frequency is 356 hz at 18.0^{o}C.

9. Determine the frequency of an open tube organ pipe that has a diameter of 0.03m and a length of 0.6m at 22.0 ^{o}C.

10. A closed tube organ pipe is 0.045 m in diameter and 0.20 m long. Its frequency is 385 hz. Find the speed of sound.

FORMULAS:

$v = f\lambda$ ..... $d = vt$ ..... $\lambda = 4(l + 0.4d)$ ..... $\lambda = 2(l + 0.8d)$ ..... $v = 331$m/s at 0^{o}C and increases 0.6m/s/C^{o}

When finished, please STAPLE this exam onto your papers and turn in on due date.