Blitz, Chapters 12 & 13, Form T-Z

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 <u>HAND WRITE</u> THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!

1. Define: amplitude, wave length, period, frequency, and rectilinear propagation.

2. Explain forced vibrations and resonant vibrations, and give examples.

3. Tell about AM and FM (amplitude modulation and frequency modulation) of waves and give two examples.

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

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

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

6. Determine the frequency of an open tube organ pipe that has a diameter of 0.23m and a length of 4.6m at 21.0^{o}C.

7. A closed tube organ pipe is 0.037m in diameter and 0.19m long. Its frequency is 285hz. Find the speed of sound.

8. Find the distance to a thunder clap when the time for the sound to arrive is 10.4s at 12°C.

9. Find the wavelength of a sound whose frequency is 287hz at 25.0^{o}C.

10. Find the speed of a wave whose frequency is 56.3hz and whose wavelength is 7.82 m.

FORMULAS:

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

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