**Year 11 Physics: Applications of Waves**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Total : \_\_\_\_\_\_\_ out of 30**

**Notes: \_\_\_\_\_ /5 References \_\_\_/ 2**

**Ensure you use terminology such as wavelength, frequency, refraction, reflection, diffraction where relevant**

1. Medical applications of waves: Ultrasound imaging
2. Explain how ultrasound imaging works? **(2 marks)**
3. What are typical frequencies used for ultrasound imaging **( 1mark)**
4. Resolution relates to the size and the detail of the image that can be seen? Higher resolution means that smaller objects can be seen.

Explain how frequency/ wavelength affect the size of the image that can be resolved ,

how the same considerations affect penetration of the signal (ie how deep the ultrasound goes into the body and how this affects the applications the ultrasound can be used for.

**(4 marks)**

1. **Geophysics:**
2. Name and describe (include a diagram) the two main types of body waves found in an earthquake. If you have researched other waves instead, describe those. **( 4 marks)**
3. How do geologists use the information from these waves to provide information about the structure of the Earth. Include 2 examples. ( 4 marks)
4. Give one example of how waves are used for imaging by geologist in exploration for minerals, natural gas and petroleum? ( 2 marks)
5. Acoustic engineering: Describe two examples of how acoustic engineering is used to modify sound waves . Include a diagram where appropriate ( 3 marks each example, total 6 marks)

Example one:

Example two