10BSc3 Homework Sheet 5

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A rough guide as to how the marks are given is as follows:

		Effort Grade		Achievement of task
A	Excellent	this effort grade will rarely be given – to get this mark the work must demonstrate great effort and real clarity	+	Excellent understanding of the work
B	Good	will be given e.g. when a lot of effort has obviously been put into the work or when the work is very clearly set out	=	Good understanding of the work
C	Average	will be given for work which is of a satisfactory, acceptable standard; if you get less than C you must improve the standard at once!	−	Poor understanding of the work
D	Poor			
E	Very Poor			

If a question has one or a number of * before it then it contains points which are inherently difficult and which will be met more generally in subsequent years.

Don't forget to do your homework in the **back** of your exercise book!

6 On waves and the wave equation

a. Write down 5 descriptions of waves you might encounter in everyday life.

b. One hertz (written as 1 Hz) means 1 per second, and is the unit of frequency. Estimate (i.e. have a guess!) the size of frequency (in Hz) of:

   i. Brushing your teeth.

   ii. The rotation of a washing machine (washing cycle and spin cycle!)

   iii. Waves breaking on a beach.

   iv. Fastest speed a note can be repeated on a piano.

   v. *Christmas.

c. Now try to find out / calculate these frequencies to see how good your estimates were. Don't change your initial guesses! (NB For the piano, can you find out for an upright and a grand piano. They are different!)

d. Out of the waves in part a, write down with an estimate (in m/s) the wave which has the

   i. ... highest speed?

   ii. ... the lowest speed?