Sound 2016
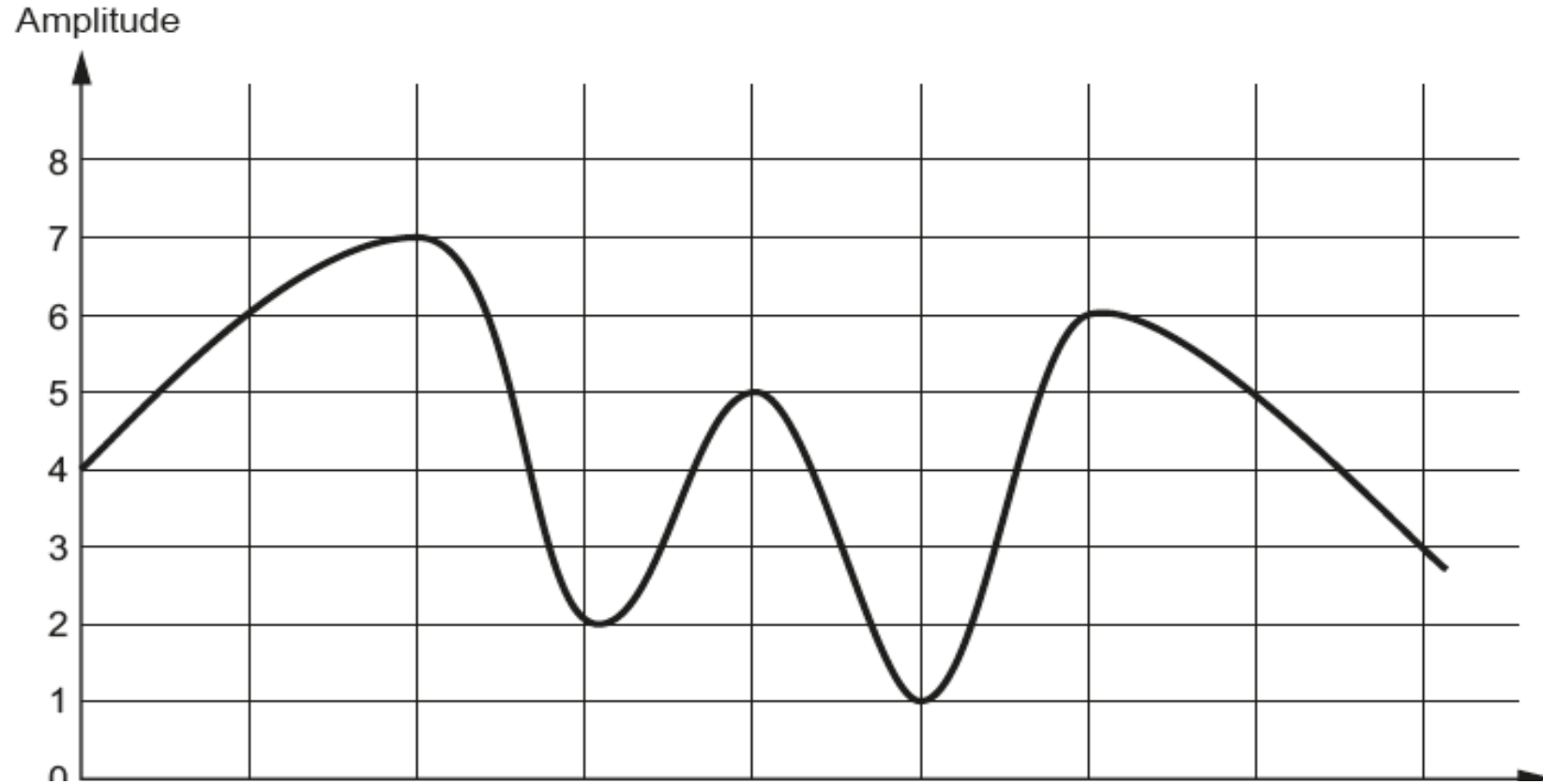
. Below is a representation of a simple sound wave. The wave is sampled every second and the amplitude is stored as a 4-bit binary number.

Amplitude

(a) Complete the table below to show how the wave would be represented in binary. [5]

Time	1	2	3	4	5	6	7	8
Amplitude	6	7	2					3
Binary	0110	0111						0011

eduqas
Part of WJEC

Sound 2016

(b) (i) State the number of bits required to store the binary data from the completed table. [1]

....

(ii) Convert your answer from *(b)* (i) to bytes. [1]

....

(c) Taking a sample every second produces a very poor quality sound. Explain how the sample rate could be altered to improve the sound quality. [1]

....

....

(d) (i) If ten samples were taken every second, state the effect on the size of the file. [1]

....

(ii) Calculate the number of bytes required to store the data for the wave when ten samples per second are taken. [2]

You **must** show your workings.

eduqas
Part of WJEC

Sound sampling is used in the digital storage of sound.
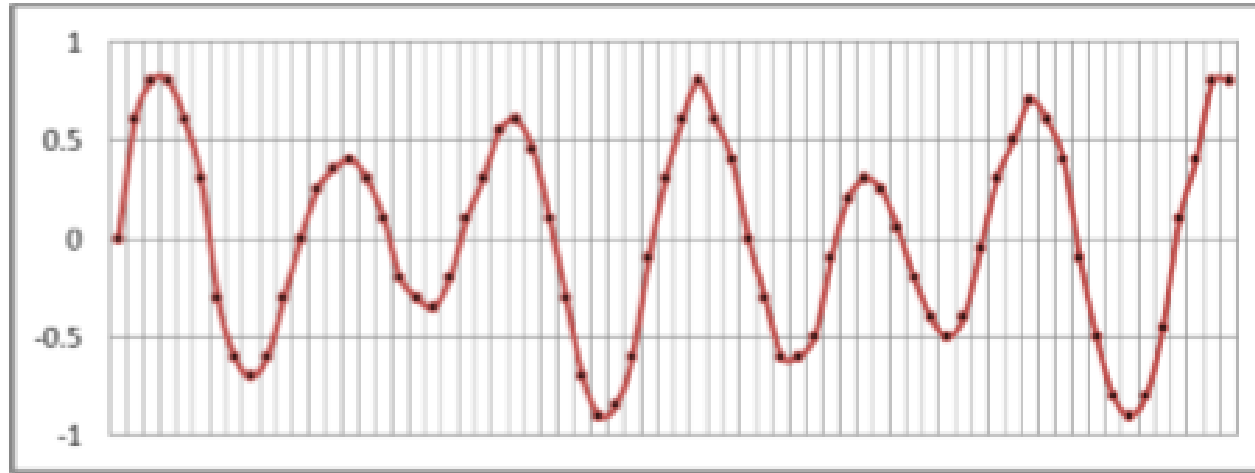
(a)   Explain the process of sound sampling.   [3]

....

....

....

....

....

....

....

(b)   Describe how sound samples are stored.   [2]

....

....

....

....

Sound and graphics can be stored by computer systems.

(a)   **Tick** (✓) the boxes below to show whether the statements about sound sampling are TRUE or FALSE.   [3]

STATEMENT	TRUE	FALSE
Natural sound is in digital form. This is sampled and converted into analogue form to be stored by computer systems.	☐	☐
A sound sample rate of 16 KHz means the wave is sampled 160,000 times a second.	☐	☐
The lower the sampling rate, the better the quality of the sound file.	☐	☐

(b)   State what is meant by metadata and give an example of metadata stored in graphics files.   [2]

eduqas
Part of WJEC