

Sound

Worksheet 1

1

Explain how an analogue recording is made.

2

Why doesn't a digital recording of a piece of music contain all of the sound available?

3

(a) Explain what is meant by the 'sample rate'.

(b) What sample rate is standard for audio CDs?

4

(a) What is meant by the 'bit depth' and how does it affect the quality of the digital recording?

(b) What is the bit depth used in:

(i) CD audio?

(ii) DVD-Audio and Blu-ray discs?

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5 (a) What is meant by the 'bit rate'

(b) What is the standard bit rate for:

(i) CD quality?

(ii) Internet radio?

(c) (i) Complete the following equation which can be used to calculate the bit rate of a recording.

Bit rate = x x Number of channels

(ii) Calculate the bit rate of a 24 bit file sampled at 44.1Khz in stereo (2 channels). Show your answer in bits per second kilobits per second. Show your working.

6 Audio files can be very large and for more efficient storage and transmission, they are often compressed.

(a) List *two* uncompressed file formats.

(b) What is meant by 'lossless' compression and give an example file format.

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(c) What is meant by 'lossy' compression and give an example file format.

7

List *five* advantages of a digital sound recording over an analogue one.
