<table>
<tr><td>6(a)</td><td>1 mark for correct answer

Type of compression: lossy
Justification: There will be fewer samples per second, so data will be permanently lost

// There will be fewer samples per second, so the original sound cannot be re-created</td></tr>
<tr><td>6(b)</td><td>1 mark for correct words in the correct order

<table>
<tr><td>Binary Value</td><td>0011 1000</td><td>0011 1100</td><td>0011 1110</td></tr>
<tr><td>Word</td><td>Science</td><td>is</td><td>Amazing!</td></tr>
</table>
</td></tr>
<tr><td>6(c)(i)</td><td>1 mark for correct answer

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>parity bit ↓</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
</table>
</td></tr>
<tr><td>6(c)(ii)</td><td>1 mark for correct answer

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>parity bit ↓</td></tr>
<tr><td></td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>parity byte→</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
</table>
[1]
</td></tr>
<tr><td>6(d)</td><td>1 mark for the working
1 mark for the correct answer

Working:
(1000 * 2000 * 16) / (8 * 1000 * 1000)
// (1000 * 2000 * 2 / (1000 * 1000)

Answer: 4 megabytes</td></tr>
</table>

6(a)	**1 mark** for identification **1 mark** for matching description e.g. • ASCII • 7/8 bits per character // represents 128/256 characters // represents all characters from Latin alphabet • UNICODE • 8/16/32 bits per character // represents 256/65536+ characters // represents all characters in all languages
6(b)(i)	**1 mark** for: 256 // 2^8
6(b)(ii)	**1 mark** for: Increased file size
6(b)(iii)	**1 mark** for each bullet point (**max 2**) e.g. • The change may not be noticeable // Data removed is usually not noticed by the human eye • … for example, changes in shade/detail • It produces a larger decrease in file size compared to lossless // Lossy decreases file size considerably
6(c)(i)	**1 mark** for each bullet point (**max 2**) • Value/magnitude/size of the analogue sound wave is measured a set number of times each second/time / at set intervals • Each sample/reading/measurement is given the binary number and stored in sequence
6(c)(ii)	**1 mark** for each correct point and **1 mark** for matching expansion e.g. • Decrease sample rate • … fewer samples/readings/measurements stored per second // fewer bits per second stored • Decrease sample resolution • … fewer bits per sample/reading/measurement // each sample has fewer bits • Sound outside of set/human hearing range is removed • … fewer measurements are stored / decreases the number of possible binary values so fewer bits are stored

7(a)(i)	**1 mark** for each correct definition Colour depth: • the number of bits used to represent a colour // the number of colours that can be represented in an image File header: • stores data about the image file / metadata
7(a)(ii)	**1 mark** for each correct explanation Image quality: • Decreasing resolution means details within the image are lost because there are fewer pixels // Increasing resolution means the image is more detailed because there are more pixels File size: • Decreasing the resolution will decrease the file size because there are fewer pixels therefore less data // Increasing the resolution will increase the file size because there are more pixels therefore more data
7(a)(iii)	**1 mark** for correct method For example: • Run-Length Encoding
7(b)	**1 mark** for each correct definition Property: • an attribute of a drawing object // data about a shape // defines one aspect of the appearance of a drawing object Drawing list: • all the drawing objects/shapes in an image // stores the commands/descriptions / mathematical equations required to draw each object