

1. Using the table provided in your notes, translate the following phrases:

Hex	54	68	65	72	65	20	69	73	20	6E	6F	20	73	70	6F	6F	6E
Char																	

Hex																	
Char	T	h	e		c	a	k	e		i	s		a		l	i	e

Binary		011 0001	010 1011	011 0010	011 1101	011 0011
Char						

(6)

2. Describe 3 differences between bitmap and vector images.

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(3)

3.

a. A bitmap image is 6 pixels wide and 4 pixels tall. If the image is black and white, state the minimum number of bits required represent this image.

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b. If the image uses a 16 colour palette, state the minimum number of bits required to represent this image.

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c. Explain why the file used to store the image must be larger than this.

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(4)

4. A scientist is conducting an experiment to see how dogs respond to sound. Dogs can generally hear sound in the range 67 – 45,000Hz. Suggest, and justify, a suitable sampling rate for the scientist to use when recording the sound.

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(3)

5. A voice recording is sampled at 8KHz at a bit depth of 16 bits per sample. Describe the effects in terms of audio quality and file size in each of the following situations when compared to the original recording:

a. The sound is re-recorded and sampled at 16KHz.

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b. The sound is re-recorded with a bit depth of 8 bits.

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c. The audio file is saved as a 16KHz project with a bit depth of 32 bits.

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(6)

6. Name two common protocols for encoding text.

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(2)

7. The following is the binary representation of a monochrome image that is 10 pixels square, going from left to right and completing one row at a time. Shade in the pixels to display the image.


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0111 1111 1011 1111 1111 1100 0111 1111
1100 1111 1100 1001 1111 1001 0011 1111
0010 1111 0110 1011 1111 1111 1101 1111
1110
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(3)

8. Describe what must be done to a vector image in order for it to be displayed.

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(2)

9. Explain why many DVDs use audio sampled at 96KHz and at a bit depth of 24 whereas the developer of a new Voice over IP system uses audio sampled at 8KHz and at a bit depth of 8 bits.

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(2)