

MrGoff.com Data Rep Test (Offline)

Complete the missing parts of the table below by stating the number base used in each case (3 marks)

Scenario	Number base
The number base understood by a computer	
The number based used for MAC addresses	
The number base used in an abacus	

Convert the denary number 145 to both binary and hexadecimal. Show your working for both. (4 marks)

What is 2.3GB in kB? Show your working. (2 marks)

Add 01000110, 00110011 & 01000001 (3 marks)

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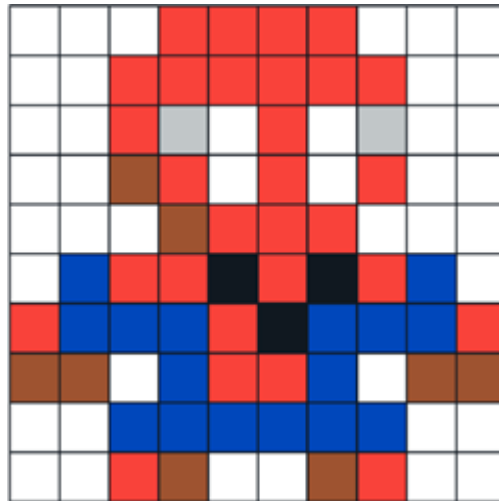
Complete a left bitshift of two places on the number shown and explain the effect this has on the denary value it represents. (2 marks)

128	64	32	16	8	4	2	1	Tot
0	0	1	1	1	0	0	0	56

Explain the similarities and differences between ASCII and Unicode. (4 marks)

Explain what a pixel is and how they relate to bitmap images. (3 marks)

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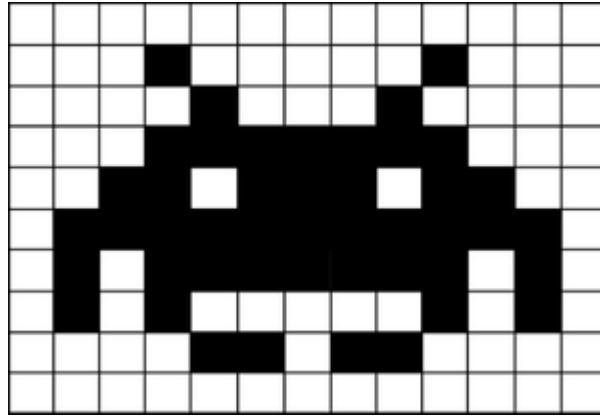


Bitmap image: for those with visual difficulties the colours present are white, red, grey, brown, black and blue

Calculate the filesize of the bitmap image above in bytes. Show your working. (4 marks)

Explain the effect on an image of increasing the colour depth from 3 to 4. (4 marks)

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If 1 represents white and 0 represents black, write out the second row from the bottom of the image in binary. (1 mark)

Write out the second row of the image from the top using run length encoding using W for white and B for black.(1 mark)

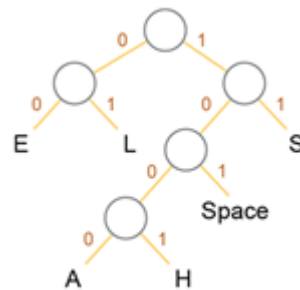
Explain how analogue sound is converted into a digital sound file. (2 marks)

Explain how increasing the sample resolution affects a digital sound file. (3 marks)

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Explain how decreasing the sample rate affects a digital sound file. (3 marks)

Explain what compression is and two reasons it is useful. (3 marks)



Explain the how much space can be saved by encoding the word 'SEALS' using this tree. (3 marks)
