National 5 Computing Science

Unit: Computer Systems

Worksheet 1

Type answers in the box below or beside each question – the box will expand as required.

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| 1. | Computers store all data using: 1. Binary digits b) Denary digits c) Information d) Pseudocode
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| 2. | The correct term for a whole number is: 1. Real number b) Pretend number c) Integer d) Sum number
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| 3. | Explain what is meant by the word pixel.  |
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| 4. | In your own words, explain why computers use binary to represent data. |
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| 5. | Convert the following binary numbers to denary:- |
| a. | 1011 |  |
| b. | 1110 |  |
| c. | 10101000 |  |
| d. | 11010001 |  |
| e. | 10000111 |  |
| f. | 11101111 |  |
|  |  |
| 6. | Convert the following denary numbers to binary:- |
| a. | 13 |  |
| b. | 17 |  |
| c. | 92 |  |
| d. | 100 |  |
| e. | 139 |  |
| f. | 248 |  |
|  |  |
| 7. | Identify the mantissa and exponent for the following numbers:- |
| a. | 0.238× 103  | Mantissa:- |  | Exponent:- |  |
| b. | 0.438145× 102  | Mantissa:- |  | Exponent:- |  |
| c. | 0.9344312× 105  | Mantissa:- |  | Exponent:- |  |
|  |  |
| 8. | Work out what the following message is from the ASCII values:67, 111, 109, 112, 117, 116, 105, 110, 103, 32, 83, 99, 105, 101, 110, 99, 101, 32, 105, 115, 32, 103, 114, 101, 97, 116, 33  |
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| 9. | Here's another ASCII message, though this time the character codes are in binary: 01001000, 01000101, 01001100, 01001100, 01001111  |
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| 10. | Can you use ASCII to write your ﬁrst name in 8-bit binary numbers?  |
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