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 | | | | | |
|  |  | | | | | |
| 2. | The correct term for a whole number is:   1. Real number b) Pretend number c) Integer d) Sum number | | | | | |
|  |  | | | | | |
| 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 | | | | | |
|  |  | | | | | |
| 9. | Here's another ASCII message, though this time the character codes are in binary:    01001000, 01000101, 01001100, 01001100, 01001111 | | | | | |
|  |  | | | | | |
| 10. | Can you use ASCII to write your ﬁrst name in 8-bit binary numbers? | | | | | |
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