Summative assessment – Answers

1. What does the word ‘bit’ mean in Computing?
   1. Very small piece
   2. **Binary digit** ✔
   3. A group of 8 0s and 1s
   4. A sequence of 0s and 1s
2. Which of the following is a binary digit?
   1. 2
   2. bit
   3. **0** ✔
   4. 01
3. Which of the following would you characterise as ‘binary’?

(You can select more than one option.)

* 1. **A switch** ✔
  2. An oven knob
  3. A dice
  4. **A coin** ✔

1. Which of the following is a byte?
   1. 8
   2. bit bit bit bit bit bit bit bit
   3. **01100101** ✔
   4. 1
2. How many different sequences of 3 binary digits can there be?
   1. 3
   2. 6
   3. **8** ✔
   4. 9
   5. Infinite
3. How many different sequences of 5 binary digits can there be?
   1. 5
   2. 10
   3. 25
   4. **32** ✔
   5. Infinite
4. What is the size or length of this sequence of binary digits: 101?
   1. 2 bits
   2. **3 bits** ✔
   3. 5
   4. 101
5. Here is a sequence of binary digits:

011000101110010100110100010001110101001110001010101

What could this sequence represent? What could it mean?

* 1. A piece of text
  2. A number
  3. A set of instructions
  4. Musical notes
  5. **Any piece of information** ✔

1. Which of the following binary numbers is equivalent to decimal 4?
   1. 10
   2. **100** ✔
   3. 1010
   4. 1111
2. Which of the following binary numbers is equivalent to decimal 9?
   1. 101
   2. **1001** ✔
   3. 1010
   4. 10000
3. Which of the following binary numbers is equivalent to decimal 27?
   1. 11001
   2. 10111
   3. **11011** ✔
   4. 11111
4. Which of the following decimal numbers is equivalent to binary 110?
   1. 2
   2. **6** ✔
   3. 30
   4. 110
5. Which of the following decimal numbers is equivalent to binary 10011?
   1. **19** ✔
   2. 22
   3. 23
   4. 10011
6. Which of the following decimal numbers is equivalent to binary 11100?
   1. 14
   2. **28** ✔
   3. 70
   4. 320
7. Which prefix would you use to describe a quantity that is in the billions?
   1. Kilo-
   2. Mega-
   3. **Giga-** ✔
   4. Tera-
8. What does the prefix ‘mega-’ stand for?
   1. Thousand
   2. **Million** ✔
   3. Billion
   4. Trillion
9. Link the prefixes in the left-hand column to their meaning:

|  |  |
| --- | --- |
| * 1. Giga-   2. Kilo-   3. Mega-   4. Tera- | 1. Thousand 2. Million 3. Billion 4. Trillion |

**Answer:** A-3, B-1, C-2,, D-4

1. Select the sizes that are equivalent to 8,000 bits:

(You can select more than one option.)

* 1. **1,000 bytes** ✔
  2. 8,000 bytes
  3. 64,000 bytes
  4. **8 kilobits** ✔
  5. 8 megabits

1. Select the sizes that are equivalent to 500MB (megabytes):

(You can select more than one option.)

* 1. 500Mb (megabits)
  2. 0.5kB (kilobytes)
  3. **500,000kB (kilobytes)** ✔
  4. **0.5GB (gigabytes)** ✔
  5. 5,000GB (gigabytes)

1. In the left-hand column, there is a list of components and equipment used in digital devices for storing, processing, and transmitting information. Link them to the physical phenomena that they mainly rely upon to function:

|  |  |
| --- | --- |
| * 1. Integrated circuits (used in processors, graphics cards, memory chips, etc.)   2. Hard drives   3. Optical drives   4. Optical fibre cables   5. Network cables   6. Wireless transmitters and receivers | 1. Sound 2. Light 3. Electricity 4. Magnetism 5. Electromagnetic waves |

**Answer:** A-3, B-4, C-2, D-2, E-3, F-5

1. Fill in the gaps:

Humans use sequences of symbols to (1)................................................. (2)................................................. and (3)............................................ information.

**Answer:** store, process, transmit

The answer was provided back in Lesson 1, but it is important that learners are able to recall this group of three verbs: to store, process, and transmit information. Computing is often defined as the science that studies these three problems and how they can be solved by machines.

1. Can you provide two examples of coding schemes that we use to represent characters using sequences of symbols?

**Possible answers:** semaphore flags, sign language, Braille, Morse code, ASCII

1. Can you name one well-known code used in digital devices that represents every character as a sequence of 7 binary digits?

**Answer:** ASCII

It was introduced, among other examples, in Lesson 2 and mentioned throughout the unit. If you remove the ‘7 bit’ restriction from the question, then learners might also answer with other coding schemes, such as UTF-8.

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