**Assessment – Answers**

1. Classify the items below as either software or hardware.

**Note:** There may be items that fall into **neither** category or **both** categories.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * 1. A keyboard   2. A program for editing images   3. A mouse   4. The operating system   5. A screen   6. A file containing an image   7. A browser (a program for surfing the web)   8. A wireless network adapter (a device for connecting wirelessly to other computers)   9. An astronomy program | |  |  | | --- | --- | | **Hardware** | ACEH |  |  |  | | --- | --- | | **Software** | BDGI | |

1. Which of the following are programs?

**Note:** There may be more than one correct option. Select **all** that apply.

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. A word processor   2. An operating system   3. An image   4. The processor (CPU) | |  |  | | --- | --- | | **Answer** | AB | |

1. What does a program consist of?

**Note:** Answer with **a single word**.

|  |  |
| --- | --- |
| **Answer** | Instructions |

1. Provide two examples of operating systems.

|  |  |
| --- | --- |
| **Answer** | Windows, macOS, Linux, Android, Raspberry Pi OS |

1. What does a processor (CPU) do?

**Note:** There may be more than one correct option. Select **all** that apply.

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Stores programs   2. Stores data   3. Executes programs   4. Executes data   5. Processes data | |  |  | | --- | --- | | **Answer** | CE | |

1. What does the main memory (RAM) do?

**Note:** There may be more than one correct option. Select **all** that apply.

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Stores programs   2. Stores data   3. Executes programs   4. Executes data   5. Processes data | |  |  | | --- | --- | | **Answer** | AB | |

1. Provide two examples of storage devices.

|  |  |
| --- | --- |
| **Answer** | Hard disks, solid-state disks, flash drives, SD cards, optical discs |

1. What is stored in storage devices?

**Note:** There may be more than one correct option. Select **all** that apply.

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Hardware components   2. Programs   3. Data   4. None of the above. The term ‘storage’ is misleading. | |  |  | | --- | --- | | **Answer** | BC | |

1. Classify the devices below as input or output devices.

**Note:** There may be devices that fall into **neither** category or **both** categories.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * 1. Mouse   2. Keyboard   3. Printer   4. Microphone   5. Speaker   6. Camera   7. Touchscreen   8. Processor   9. Sensors | |  |  | | --- | --- | | **Input** | ABDFGI |  |  |  | | --- | --- | | **Output** | CEG | |

1. You turn on your computer. As soon as it’s ready, you open a file containing a document and start editing it using a word processor.

If you take a snapshot of your system at that point, what will the processor (CPU), main memory (RAM), and storage devices contain? Select items from the list below.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| * 1. All the instructions contained in the word processing program   2. All the instructions contained in the operating system   3. All the documents saved on your computer   4. All the programs installed on your computer   5. All the data for the document that you are editing   6. The instruction that is currently being carried out   7. Data for the instruction that is currently being carried out | |  |  | | --- | --- | | **Processor** | FG |  |  |  | | --- | --- | | **Memory** | ABE |  |  |  | | --- | --- | | **Storage** | CD | |

1. What is the main task of a general-purpose computing system?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. The main task is to execute programs.   2. There is no main task. It can perform any task prescribed by a program.   3. The main task depends on the system. Different systems may perform a different main task.   4. The main task depends on the user. Different users may need the system to perform a different main task. | |  |  | | --- | --- | | **Answer** | A | |

1. Which of the following are **logical** operators?

**Note:** There is more than one correct option. Select **all** that apply.

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. + (addition)   2. and (conjunction)   3. or (disjunction)   4. ⨉ (multiplication)   5. > (comparison: greater than)   6. not (negation or inversion)   7. mod (remainder) | |  |  | | --- | --- | | **Answer** | BCF | |

1. If X is a **logical** statement, what sort of values can it have?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Any number   2. Any sentence that makes sense   3. Either true or false   4. Either ‘yes’, ‘no’, or ‘don’t know’ | |  |  | | --- | --- | | **Answer** | C | |

1. A laptop computer has a ‘Battery low’ indicator that starts flashing red when the battery power falls below 20%, but only if the laptop is not charging.

Fill in the following table:

|  |  |  |
| --- | --- | --- |
| Battery below 20% | Charging | Battery low flashing red |
| true | true | false |
| true | false | true |
| false | true | false |
| false | false | false |

Which of the expressions below capture the behaviour of the ‘Battery low’ indicator?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Battery below 20% < Charging   2. Battery below 20% not Charging   3. Battery below 20% or Charging   4. Battery below 20% and not Charging   5. Battery below 20% only if not Charging | |  |  | | --- | --- | | **Answer** | D | |

1. Is the sentence below true or false?

|  |  |  |  |
| --- | --- | --- | --- |
| Complex components like the processor and the main memory can be created out of simple logic gates. | |  |  | | --- | --- | | **True or false** | true | |

1. Are the sentences below true or false?

|  |  |  |  |
| --- | --- | --- | --- |
| * 1. Artificial intelligence is about creating machines that are more intelligent than humans. | |  |  | | --- | --- | | **True or false** | false | |
| * 1. Creating a machine that can walk is not artificial intelligence because humans walk without thinking. | |  |  | | --- | --- | | **True or false** | false | |
| * 1. With machine learning, machines are trained how to perform tasks by showing them examples or providing feedback. | |  |  | | --- | --- | | **True or false** | true | |
| * 1. Machine learning does not involve programming. | |  |  | | --- | --- | | **True or false** | false | |
| * 1. The performance of machines that are trained to perform a task is only as good as the examples that have been used to train them. | |  |  | | --- | --- | | **True or false** | true | |

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