# End of Unit Quiz – Unit 1.2 Memory

1. Random access memory **(**RAM) and read only memory (ROM) are different types of memory found in computers.
	1. Give two items that are stored in RAM.

|  |
| --- |
|  |

* 1. What are the main difference is between RAM and ROM?

|  |
| --- |
|  |

* 1. Place a tick (🗸) to indicate whether each statement refers to RAM or ROM.

|  |  |  |
| --- | --- | --- |
|  | **RAM** | **ROM** |
| Data is not permanently written to this type of memory |  |  |
| Holds the instructions for booting-up the computer |  |  |
| The computer needs to be on to retain data |  |  |
| It is a type of volatile memory |  |  |
| Data is pre-written and comes with the computer |  |  |
| Data is permanently written |  |  |

1. A ROM stores instructions that are needed to start/boot up a computer.
	1. What is the role of the Power On Self-Test (POST) in the boot sequence?

|  |
| --- |
|  |

* 1. ROM is present in automatic washing machines. What are some specific instructions that would be in such a ROM?

|  |
| --- |
|  |

* 1. What are the reasons that ROM is considered permanent and secure?

|  |
| --- |
|  |

1. Virtual memory doesn’t physically exist on a memory chip but is an optimisation technique that is implemented by the operating system.
2. What is virtual memory?

|  |
| --- |
|  |

1. Why is virtual memory needed?

|  |
| --- |
|  |

1. How is virtual memory implemented?

|  |
| --- |
|  |

1. Flash memory is sold state media.
2. What does solid state media mean?

|  |
| --- |
|  |

1. What are 3 uses for flash memory?

|  |
| --- |
|  |

1. What are the advantages and problems associated with the use of flash memory?

|  |
| --- |
|  |

**Answers**

1. Random access memory **(**RAM) and read only memory (ROM) are different types of memory found in computers.
	1. Give two items that are stored in RAM.

|  |
| --- |
| Programs currently in use.Data currently in use. |

* 1. What are the main difference is between RAM and ROM?

|  |
| --- |
| ROM is non-volatile and RAM is Volatile / RAM loses memory when computer switched off, RAM doesn’t. |

* 1. Place a tick (🗸) to indicate whether each statement refers to RAM or ROM.

|  |  |  |
| --- | --- | --- |
|  | **RAM** | **ROM** |
| Data is not permanently written to this type of memory | 🗸 |  |
| Holds the instructions for booting-up the computer |  | 🗸 |
| The computer needs to be on to retain data | 🗸 |  |
| It is a type of volatile memory | 🗸 |  |
| Data is pre-written and comes with the computer |  | 🗸 |
| Data is permanently written |  | 🗸 |

1. A ROM stores instructions that are needed to start/boot up a computer.
2. What is the role of the Power On Self-Test (POST) in the boot sequence?

|  |
| --- |
| When computer is switched on, BIOS chip performs checks.These checks are called POST (Power On Self-Test).To make sure components are present and functioning correctly / Checks peripheral devices, other hardware, storage devices, memory and system clock.When checks completed CPU starts operating system.If a test fails, an error message is shown. |

1. ROM is present in automatic washing machines. What are some specific instructions that would be in such a ROM?

|  |
| --- |
| Values stored in ROM remain whether power on or not.ROM can be removed from a computer and when replaced, values are still there.Virus attack unlikely.Values stored cannot be accidentally changed. |

1. What are the reasons that ROM is considered permanent and secure?

|  |
| --- |
| Security against accidental/malicious damage as difficult to changeVirus attack unlikelyManufactured with data required permanently stored in it so cannot be modified easily. |

1. Virtual memory doesn’t physically exist on a memory chip but is an optimisation technique that is implemented by the operating system.
2. What is virtual memory?

|  |
| --- |
| It is simulated memory that is written to a file on the hard drive / memory that appears to exist as RAM but is in secondary storage. |

1. Why is virtual memory needed?

|  |
| --- |
| When you need to run applications on the computer than its physical memory (RAM) can support.It lets more memory to be used than there is in the system. |

1. How is virtual memory implemented?

|  |
| --- |
| Operating system will set up virtual memory using the virtual memory manager (VMM).VMM creates a file on the hard disk large enough for the extra memory needed.OS can then address memory as if it were real memory stored in RAM.Maps memory addresses used by a program into physical addresses in computer memory.Swapping or paging is a process used by the operating system to move data between RAM and virtual memory.Operating system moves data when some processes are not needed immediately out of the RAM to store them in virtual memory (on the hard disk). Copies the data back into RAM when the process is needed again.Transfer between the two being made automatically as required. |

1. Flash memory is sold state media.
2. What does solid state media mean?

|  |
| --- |
| Storage media with no moving parts Refers to removable storage with no moving partsDevice that uses flash memory |

1. What are 3 uses for flash memory?

|  |
| --- |
| USB drivesMemory cards (such as in a camera)Solid-state drivesAny reasonable example |

1. What are the advantages and problems associated with the use of flash memory?

|  |
| --- |
| Advantages* Flash is durable will not break if dropped or exposed to heat.
* Very reliable as no moving parts.
* Very compact but can store lot of data in a small space.
* Very fast access time compared to a hard disk or a DVD.
* Low cost and reliable.
* Light weight so easily portable.

Problems* Can get lost easily.
* Can wear out over a long time period.
* More expensive than CD or DVD.
* The metal part that is inserted into the USB port can become bent or damaged.
 |

**OCR Resources**: *the small print*OCR’s resources are provided to support the delivery of OCR qualifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.
© OCR 2017 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: n/a

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: resources.feedback@ocr.org.uk

We’d like to know your view on the resources we produce. By clicking on ‘Like’ or ‘Dislike’ you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click ‘Send’. Thank you.

Whether you already offer OCR qualifications, are new to OCR, or are considering switching from your current provider/awarding organisation, you can request more information by completing the Expression of Interest form which can be found here: [www.ocr.org.uk/expression-of-interest](http://www.ocr.org.uk/expression-of-interest)

Looking for a resource? There is now a quick and easy search tool to help find free resources for your qualification:
[www.ocr.org.uk/i-want-to/find-resources/](http://www.ocr.org.uk/i-want-to/find-resources/)

This formative assessment resource has been produced as part of our free GCSE teaching and learning support package. All the GCSE teaching and learning resources, including delivery guides, topic exploration packs, lesson elements and more are available on the qualification webpages.

If you are looking for examination practice materials, you can find Sample Assessment Materials (SAMs) on the qualification webpage: [Computer Science (9-1)](http://www.ocr.org.uk/qualifications/gcse-computer-science-j276-from-2016/)