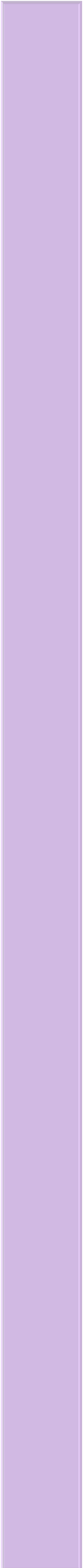
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| **St. Anne’s Academy** |
| **Home Learning Work Booklet: Computer Science** |
| **Main Topics Covered: Paper 1: Systems Architecture and Memory**  **Year 10** |
| Mrs Graziano  2020-2021 |





**Past Exam Questions**

Answer the questions below, to help you revise what has been covered in 1.1 Systems Architecture.

1. John is buying a new computer. He has been told the CPU is an integral part of a computer system.
2. What does CPU stand for? [1]

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**1.1 Systems Architecture**

1. Describe three factors specific to the CPU John should consider when buying a new computer [6]

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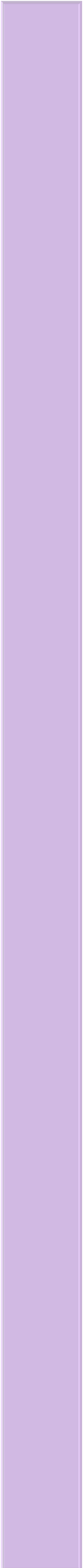
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1. When John is looking at computers, he notices that Computer A is dual core, and Computer B is quad core.
   1. Describe what is meant by a core [1]

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* 1. Explain which computer would be better for John to buy based on the number of cores [2]

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**1.1 Systems Architecture**

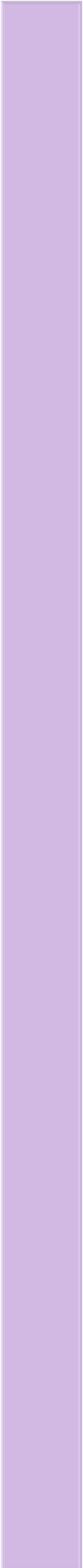
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1. Look at the table below. Tick **one** box in each row to show whether each statement is True or False [5]

|  |  |  |
| --- | --- | --- |
| **Statement True False** | | |
| CPU stands for Central Processing Unit |  |  |
| The CPU fetches and decodes instructions |  |  |
| The speed of a CPU is usually measured in GigaHertz (GHz) |  |  |
| If a CPU has many cores, this slows the computer down |  |  |
| The hard disk drive is part of the CPU |  |  |



1. Describe four stages that occur in the Fetch, Decode, Execute Cycle [4] 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**1.1 Systems Architecture**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Describe the role of the Memory Address Register and Memory Data Register when processing instructions [2]

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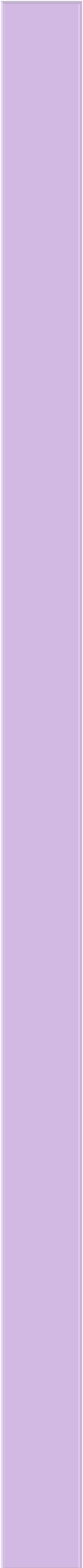
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1. Identify two components, other than the CPU, that can be upgraded in order to improve the performance of a computer [2]

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. John buys a new washing machine. He is told it is an embedded system.

Describe what is meant by an ‘embedded system’ [1]

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Other than the example given above, identify two examples of embedded systems [2]

**1.1 Systems Architecture**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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#### Past Exam Questions

Answer the questions below, to help you revise what has been covered in 1.2 Memory.

1. State what is meant by ‘RAM’ and ‘ROM’ [2]

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1. Describe what the purposes are of both RAM and ROM in a computer system [2]

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**1.2 Memory and Storage**

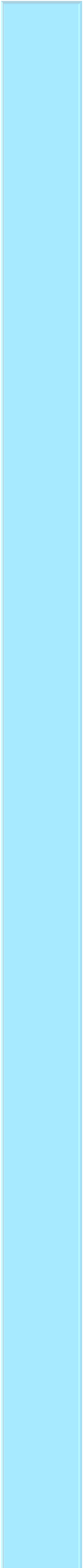
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1. Look at the table below. Tick **one** box in each row to show whether each statement is about RAM, or ROM [5]

|  |  |  |
| --- | --- | --- |
| **Statement RAM ROM** | | |
| Programs and data which are currently in use are loaded here |  |  |
| All the contents are lost when the power is turned off |  |  |
| It is used to boot up the computer when it is switched on |  |  |
| It is usually measured in Gigabytes (GB) |  |  |
| It is rewritable |  |  |



1. Mina’s computer has 4GB of RAM.
   1. Describe how the size of the RAM affects the performance of a computer [2]

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* 1. Mina decides to upgrade her RAM to 6GB.

Describe how this will now affect the performance of her computer [2]

**1.2 Memory and Storage**

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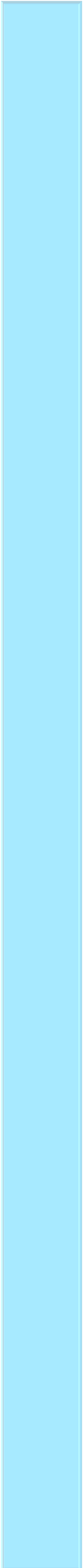
1. Mina’s computer also uses Virtual Memory (VM).
   1. Describe what is meant by Virtual Memory [2]

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* 1. State why Virtual Memory is needed [1]

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1. Flash Memory is becoming an emerging choice for manufacturers to use when building new devices.

Describe two reasons why it is better to use Flash Memory in a Tablet Computer, compared to a Hard Disk [4]

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**1.2 Memory and Storage**

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1. Describe what SSD stands for, and why it works quicker than a Hard Disk [2]

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