Chhetri Academy

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GCSE COMPUTER SCIENCE

1.1

OCR J277 | Specification point 1.1.2

CPU performance

Untiered

Past paper question booklet

1	2019	Untiered
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

1 Kerry wants to buy a new computer, but she does not understand what the different parts of a computer do.

(a) Kerry has heard of a CPU but does not know what it is.

(i) The following sentences describe the purpose of a CPU.

Complete the sentences by filling in the missing words.

CPU stands for ..... .

It is the part of the computer that fetches and executes the .....

that are stored in ..... .

The CPU contains the Arithmetic ..... Unit (ALU) and

the ..... Unit (CU).

[5]

(ii) Kerry is looking at two computers; one has a single core processor and the other has a dual core processor.

Explain why having a dual core processor might improve the performance of the computer.

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..... **[2]**

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(iii) One computer has 64 kilobytes of cache and the other has 512 kilobytes of cache.

Explain how the cache size can affect the performance of the CPU.

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..... **[2]**

(b) Both computers have RAM and ROM.

(i) The table has **five** statements describing RAM and/or ROM.

Tick (✓) **one or more** boxes in each row to identify if that statement describes RAM and/or ROM.

	RAM	**ROM**
Stores data		
The memory is volatile		
Data will not be lost when the computer is turned off		
Data is read-only, cannot be changed		
Stores currently running data and instructions		

[5]

(ii) Give **one** difference between RAM and flash memory.

.....

..... **[1]**

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Turn over

(c) Kerry has 5GB of files to transfer from her laptop at work to her new computer. She has been told to buy an external solid state device to do this.

(i) Give **one** example of a solid state device.

.....

..... **[1]**

(ii) Identify whether the device given in **part (c)(i)** is an example of primary or secondary memory.

.....

..... **[1]**

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(iii)* Kerry was originally going to use an optical storage device to transfer her files.

Discuss whether an optical or solid state device is the most appropriate media to transfer these files.

You may want to consider the following characteristics in your answer:

- portability
- robustness
- capacity
- cost

[8]

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Turn over

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(iv) The filesizes of Kerry's files are usually displayed in megabytes (MB) or gigabytes (GB).

Calculate how many MB are in 5GB. Show your working.

..... MB **[2]**

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