



1.1.2 Types of Processors

1 CPUs can be designed to take a CISC or a RISC approach.

(a) Describe the characteristics of RISC and CISC processors.

[2 marks]

(b) Identify **one** situation in which a **RISC** processor would be a more appropriate choice, and **one** situation in which a **CISC** processor would be a more appropriate choice.

[2 marks]

2 Explain why using a RISC processor rather than a CISC processor is likely to result in increased battery life.

[2 marks]

3 A photo frame has a RISC processor. Describe **one** advantage to the company of using a RISC processor, rather than a CISC processor.

[2 marks]

4 A charity has several desktop computers in their office that use a CISC processor. They are considering buying mobile devices for their staff to use when they are not in the office. Discuss whether these mobile devices should use the same CISC processors that are used in their desktop computers or if they should use a RISC processor instead.

You should include the following in your answer:

- The difference between each processor type
- The suitability of each processor type for mobile devices.

[12 marks]

5 An architect business specialises in designing houses.

(a) The business uses high end computers with powerful GPUs.

Give two uses the business might have for GPUs.

[2 marks]





6 Describe **one** non-graphical use an insurance company may have for a GPU.

[2 marks]

7 A game console has a CPU and GPU. It uses the GPU for 3D graphics. Explain why a GPU is more suitable than a CPU for this task.

[3 marks]

8 Define the term 'multicore processor'.

[2 marks]

9 The Government Communications Headquarters (GCHQ) is responsible for monitoring communications in order to keep the UK secure. A large part of its job involves trying to break into encrypted messages.

(a) The code breakers at GCHQ have access to supercomputers (computers with many processors).

Describe why a supercomputer will be useful to GCHQ.

[2 marks]

10 Some problems require a large amount of computing power that goes well beyond a single CPU.

Discuss the different approaches that can be taken to provide increasingly larger amounts of computing power and the types of problem they are suited to.

[12 marks]

