

1.1 PROCESSORS, INPUT/OUTPUT AND STORAGE · 1.1.2

Types of processor: CISC, RISC, GPUs & multicore

Original practice questions · 36 marks · about 45 minutes · spec 1.1.2(a)(b)(c)

Instructions. Answer all questions. The number of marks is shown in brackets []. Quality of written communication is assessed in the extended-response question.

1 Total: 4 marks

This question is about types of processor.

(a) Give what the abbreviations **CISC** and **RISC** stand for. [2]

(b) State **one** task, other than graphics, for which a GPU can be used. [1]

(c) State what is meant by the term *parallel processing*. [1]

2 Total: 6 marks

This question is about CISC and RISC processors.

(a) Describe **two** differences between CISC and RISC processors. [4]

(b) Explain why a RISC processor design makes pipelining easier to implement. [2]

3 Total: 3 marks

A company makes battery-powered handheld devices.

Explain why using a RISC processor rather than a CISC processor is likely to increase the battery life of a device. [3]

4

Total: 6 marks

This question is about graphics processing units (GPUs).

(a) Describe how the architecture of a GPU differs from that of a CPU. [3]

(b) Explain why a GPU is more suitable than a CPU for rendering 3D graphics. [3]

5

Total: 5 marks

This question is about multicore and parallel systems.

(a) Define the term *multicore processor*. [2]

(b) Give **one** reason a multicore processor can sometimes complete a task faster than a single-core processor. [1]

(c) Explain why a multicore processor does not always run a program faster than a single-core processor. [2]
