

Subject: Computing System Architecture

Task 1

1(a). Ann wants to purchase a new computer and is looking at two models. The specification of the CPU in each computer is shown in **Fig. 1**.

Computer 1	Computer 2
Clock Speed 1GHZ	Clock Speed 1.4GHZ
Cache size 2MB	Cache size 2MB
Number of Cores 4	Number of Cores 2

When running a 3D flight simulator, Computer 1 is likely to run faster than Computer 2.

Using the information in **Fig. 1**, identify **one** reason for this.

[1]

(b). Identify **two** internal components that are not in **Fig. 1**, which could improve the performance of the computers.

[2]

(c). Identify **four** events that take place during the fetch-execute cycle.

[4]

Revision Tasks

2. Gareth has a satellite navigation system (Sat Nav) which contains an embedded system. Define what is meant by an 'embedded system'.

[1]

3. Alicia has designed a computer using Von Neumann architecture.

Describe the purpose of **two** registers that are used by Von Neumann architecture.

1

2

[
4]