MODULE A SYSTEMS ARCHITECTURE · A1

What a computer system is and what the CPU does

Original practice questions · ~25 minutes · 20 marks · Cambridge 0478 syllabus 3.1.1(a)

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**.

1

Total: 7 marks

A museum has a self-service information kiosk. A visitor scans a code on their entry ticket with a barcode scanner. The kiosk shows a map on a screen, plays a description through a speaker and loads the map images from a hard disk drive.

(a) State what is meant by the abbreviation CPU. **[1]**

(b) Describe the role of the CPU in the kiosk. **[2]**

(c) Tick (✓) **one** box in each row to show whether each device is an input device, an output device or a storage device. **[4]**

Device	Input	Output	Storage
Barcode scanner			
Screen			
Speaker			
Hard disk drive			

2 **Total: 5 marks**

The CPU in the kiosk runs a program by repeating a cycle.

(a) Tick (✓) **one** box to show the name of this cycle. **[1]**

Name	Tick (✓)
Input-store-output cycle	
Fetch-decode-execute cycle	
Load-save-print cycle	

(b) Complete the sentences about how the CPU runs a program. **[4]**

While the program is running, its instructions and data are held in main memory, called ..... .

The CPU ..... an instruction from main memory.

The CPU then ..... the instruction to work out what it means.

Finally the CPU ..... the instruction, which means it carries it out.

3 **Total: 3 marks**

Describe the fetch-decode-execute (FDE) cycle. **[3]**

4 **Total: 3 marks**

An office worker scans a paper invoice. A few seconds later, a copy of the invoice appears on the monitor.

Explain why the CPU is needed for the scanned invoice to appear on the monitor. **[3]**

5 **Total: 2 marks**

Tick (✓) **two** boxes to show the statements about the CPU that are true. **[2]**

Statement	Tick (✓)
The CPU stores programs permanently when the computer is switched off.	
The CPU processes instructions and data.	
A hard disk drive is part of the CPU.	
The CPU repeats the FDE cycle for each instruction in a program.	

Total for this worksheet: 20 marks