MODULE B MEMORY AND STORAGE · B2

Virtual memory

Original practice questions · ~25 minutes · 20 marks · OCR J277 spec 1.2.1

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: 6 marks

An architect's office has a desktop computer with 8 GB of RAM. The architect often has a 3D design program, an email program, a web browser and a spreadsheet open at the same time.

(a) State what is meant by virtual memory. **[2]**

(b) Explain why the architect's computer may need virtual memory. **[3]**

(c) Tick (✓) **one** box to show which item is most likely to be moved into virtual memory. **[1]**

Item	Tick (✓)
The drawing the architect is editing right now in the 3D design program	
Data for the spreadsheet, which has not been used for two hours	
The project files saved in the architect's documents folder	

2 Total: 4 marks

RAM on the architect's computer is full. The architect opens a photo editing program.

Describe how virtual memory is used so that the photo editing program can run. **[4]**

3 Total: 4 marks

Tick (✓) **one** box in each row to show whether each statement about virtual memory is true or false. **[4]**

Statement	True	False
Virtual memory is used to keep files when the computer is switched off.		
Data in virtual memory is moved back into RAM when it is needed.		
Virtual memory is a part of the CPU.		
Virtual memory is slower to access than RAM.		

4 Total: 4 marks

The architect says the computer becomes very slow when many programs are open.

(a) Explain why using virtual memory can make the computer run slowly. **[2]**

(b) Explain how adding more RAM could make the computer run faster. **[2]**

5 **Total: 2 marks**

A car park barrier has an embedded system. It runs one small program that reads a ticket and opens the barrier. The program and its data always fit in the system's RAM.

The car park's technician suggests setting up virtual memory on the barrier "just in case". Explain whether this would improve the barrier's performance. **[2]**

Total for this worksheet: 20 marks