MODULE H SOFTWARE · H3

Memory management and multitasking

Original practice questions · 20 marks · ~25 minutes · OCR J277 spec 1.5.1, 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: 5 marks

(a) State what is meant by **multitasking**. **[1]**

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

Statement	True	False
When a program is opened, the operating system transfers its instructions and data from secondary storage into RAM		
Memory management makes every open program share the same area of memory		
When a program is closed, the memory it was using can be allocated to another program		
Multitasking means the processor finishes one program completely before it starts running the next program		

2 **Total: 7 marks**

A freelance video editor uses a laptop with 8 GB of RAM. The table shows how the RAM is being used while she works.

Software	RAM in use
Operating system	2 GB
Video editing program	3 GB
Music player	0.5 GB
Web browser	1.5 GB
Free (not allocated)	1 GB

(a) Describe what memory management does when the editor opens the video editing program. **[3]**

(b) Describe how memory management allows the editor to have all of these programs open at the same time. **[3]**

(c) The editor closes the music player. State what memory management does with the 0.5 GB of RAM that the music player was using. **[1]**

3 **Total: 3 marks**

The laptop's processor has **one** core. The editor is cutting a video while the music player plays music and the web browser downloads a file.

(a) Explain how the operating system lets all three programs appear to run at the same time. **[3]**

4 **Total: 5 marks**

All the programs in the table in Question 2 are open. The editor then opens a large project in the video editing program. The project needs another 2 GB of RAM.

(a) Explain why the laptop needs to use virtual memory in this situation. **[2]**

(b) Describe how the operating system uses virtual memory so that the editor can work on the project. **[3]**

Total for this worksheet: 20 marks