1.2 Memory and Primary Storage: 10-minute Pack

OCR J277 · Calculators not allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 State one reason why ROM is described as non-volatile memory.

(Total for Question 1 is 1 mark)

2 Identify two units of digital storage that are larger than a gigabyte (GB). Give your answer in order, smallest to largest.

(Total for Question 2 is 2 marks)

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3 Explain why a computer requires both RAM and ROM, rather than just one type of memory.

(Total for Question 3 is 3 marks)

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4 This question is about units used to measure the amount of data stored in a computer.

(a) State how many bits are in one byte. **(1)**

(b) State how many bytes are in one kibibyte (KiB). **(1)**

(c) A photo file is 2.5 MB in size. Calculate the size of the file in kilobytes (KB). Use 1 MB = 1000 KB. **(1)**

(d) Calculate the size of the same photo file in bytes. Use 1 KB = 1000 bytes. **(1)**

(Total for Question 4 is 4 marks)

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Mark scheme · 1.2 Memory and Primary Storage: 10-minute Pack

Question 1

its contents are not lost / are retained when the power supply is switched off oe **B1**

Answer: Its contents are retained even when the power is switched off.

Question 2

Terabyte (TB) **B1**

Petabyte (PB), given after Terabyte **B1**

Answer: Terabyte (TB), then Petabyte (PB)

Question 3

ROM stores the fixed start-up instructions/BIOS needed to boot the computer, which must not be lost when the power is off **B1**

RAM is needed to temporarily store data/instructions for programs that are currently running, which can change **B1**

using only ROM would mean data could not be changed while the computer runs; using only RAM would mean the start-up instructions would be lost every time the power is removed (any three of these points, max 3) **B1**

Answer: ROM holds permanent, unchanging start-up instructions that survive power loss; RAM holds changeable, temporary data for running programs. Both are needed because their properties (permanent/read-only vs changeable/read-write) are needed for different jobs.

Question 4

(a) 8 **B1**

(a) Answer: 8 bits

(b) 1024 **B1**

(b) Answer: 1024 bytes

(c) 2500 (KB) cao **A1**

(c) Answer: 2500 KB

(d) 2 500 000 (bytes) cao, ft from (c) **A1**

(d) Answer: 2,500,000 bytes

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