MODULE B MEMORY AND STORAGE · B7

Units of data storage

Original practice questions · 21 marks · ~25 minutes · OCR J277 spec 1.2.3

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. No calculator. Use 1 kilobyte (KB) = 1,000 bytes. The marks for each part are shown in brackets [ ]. The total for this worksheet is **21 marks**.

1

Total: 6 marks

(a) State how many bits there are in a nibble. **[1]**

(b) Tick (✓) **one** box to show which of these is the **largest** amount of data. **[1]**

Amount of data	Tick (✓) one
3,000 KB	
2 MB	
0.5 GB	
4,000,000 bytes	

(c) Complete the table by writing the name of the unit in each gap. **[4]**

Amount	Is equal to
8 bits	1 .....
1,000 KB	1 .....
1,000 GB	1 .....
1,000 TB	1 .....

2

Total: 2 marks

(a) Write these units in order from **smallest** to **largest**. **[2]**

petabyte · nibble · gigabyte · byte · kilobyte · terabyte

Smallest

Largest

3 **Total: 6 marks**

A wildlife charity records data from cameras and sensors in a nature reserve.

(a) A temperature sensor sends a message that is 32,000 bits long. Calculate the size of the message in kilobytes (KB). Show your working. **[2]**

Answer: ..... KB

(b) The charity's archive holds 2.5 TB of video. Convert 2.5 TB into gigabytes (GB). **[1]**

Answer: ..... GB

(c) One day of camera footage is 750 MB. Convert 750 MB into gigabytes (GB). **[1]**

Answer: ..... GB

(d) A map of the reserve is 6 MB. Calculate the size of the map in bytes. Show your working. **[2]**

Answer: ..... bytes

4 **Total: 1 mark**

Storage devices are made with different fixed capacities. The charity needs one external drive to hold a backup of 1.5 TB.

(a) Tick (✓) **one** box to show the **smallest** capacity that will hold the whole backup. **[1]**

Drive capacity	Tick (✓) one
128 GB	
500 GB	
1 TB	
2 TB	

5 **Total: 2 marks**

(a) Explain why data must be stored in binary format in a computer. **[2]**

6 **Total: 4 marks**

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

Statement	True	False
One byte is the same as two nibbles		
1 petabyte is 1,000 gigabytes		
A kilobyte is larger than a megabyte		
1 GB is 1,000,000 KB		

Total for this worksheet: 21 marks