MODULE B MEMORY AND STORAGE · B7

Units of data storage

Original practice questions · 20 marks · ~25 minutes · Cambridge 0478 syllabus 1.3.1

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. No calculator. Give each answer in the units asked for in the question. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**.

1

Total: 6 marks

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

(b) State the name of the unit that is equal to 1024 pebibytes (PiB). **[1]**

(c) Complete the table. **[4]**

Unit	Is equal to
1 nibble	..... bits
1 byte	..... nibbles
1 mebibyte (MiB)	..... kibibytes (KiB)
1 tebibyte (TiB)	1024 .....

2

Total: 3 marks

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

Amount of data	Tick (✓) one
2048 KiB	
3 MiB	
0.5 GiB	
4 194 304 bytes	

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

exbibyte · nibble · mebibyte · byte · tebibyte · kibibyte

Smallest

Largest

3 **Total: 6 marks**

A weather station stores readings and photographs on its computer.

(a) One set of readings is 16 384 bits. Calculate the size of the set of readings in kibibytes (KiB). Show all your working. **[2]**

Working space

Answer: ..... KiB

(b) The station's storage drive has 3 GiB of free space. State the free space in mebibytes (MiB). **[1]**

Answer: ..... MiB

(c) A photograph is 5 MiB. Calculate the size of the photograph in bytes. Show all your working. **[2]**

Working space

Answer: ..... bytes

(d) A week of photographs is 2560 MiB. State the size of a week of photographs in gibibytes (GiB). **[1]**

Answer: ..... GiB

4 **Total: 2 marks**

A technician at the weather station writes: "1 KiB is 1000 bytes."

(a) Explain why the technician is wrong. **[2]**

5 **Total: 3 marks**

(a) Tick (✓) **one** box in each row to show whether each statement is true or false. **[3]**

Statement	True (✓)	False (✓)
A tebibyte is larger than a pebibyte		
1 GiB is 1 048 576 KiB		
There are 8 nibbles in 4 bytes		

Total for this worksheet: 20 marks