

End of Unit Quiz – Unit 1.1 Systems Architecture

1.	What is t	he purpose of the (CPU?		
2.	What is t	he function of the C	CPU?		
3.	What is r	neant by a register	?		
4.	What is t	he name and purpo	ose of one register i	n the CPU?	
5.	Tick one	box in each row to	show whether each	n component is part of the C	::::::::::::::::::::::::::::::::::::::
					7
			Part of the CPU	Not part of the CPU	1
		Cache			
		RAM			
		ALU			

Version 1 1© OCR 2017

Control Unit

GCSE (9-1) COMPUTER SCIENCE



ROM	
INOIVI	

Version 1 2© OCR 2017

Use the following information to answer questions 6 -10

	CPU 1	CPU 2
Type Quad Core		Dual Core
Clock Speed	2.3 GHz	3.1 GHz
Cache Size	512 KB	2 MB
Fitment	Socket 478	Socket 775

6.	Which processor has the fastest clock speed?
7.	What are the effects of using a processor with a faster clock speed?
8.	How many cores are in CPU 1?
9.	What are the effects of using a processor with more cores?

Version 1 3© OCR 2017

10. Which CPU has the bigger cache?

COMPUTER SCIENCE

_			
Г			
ı			
ı			
ı			
ı			
ı			
ı			
ı			

Version 1 4© OCR 2017

11.	What are the effects of using a processor with a bigger cache?
12.	What is meant by an embedded system?
13.	What is the purpose of embedded systems?
14.	Provide three examples of embedded systems.
15.	What are the purposes of the following components in the CPU? • ALU
	Control Unit

Version 1 5© OCR 2017

	Cache				
\ns	swers				
1.	What is the purpose of the CPU?				
	To fetch, decode and execute instructions OR to process data.				
2.	What is the function of the CPU?				
	To fetch, decode and execute instructions.				
3.	What is meant by a register?				
	A component for holding short term memory, used to store addresses or data currently being worked on.				
4.	What is the name and purpose of one register in the CPU?				
	Memory Address Register, used to store the address of the next instruction / data to be accessed OR Memory Data Register, used to store the data to be brought from / sent to main memory Program Counter, used to store the address of the next instruction OR Accumulator used to store the value currently being worked on / result of the last calculation.				
5.	Tick one box in each row to show whether each component is part of the CPU.				
	Part of the CPU Not part of the CPU				

Version 1 6© OCR 2017

Cache

COMPUTER SCIENCE

RAM		1
ALU	✓	
Control Unit	1	
ROM		1

Version 1 7© OCR 2017

Use the following information to answer questions 6 -10

6. Which processor has the fastest clock speed?

	CPU 1	CPU 2
Type Quad Core		Dual Core
Clock Speed	2.3 GHz	3.1 GHz
Cache Size	512 KB	2 MB
Fitment	Socket 478	Socket 775

07110			
CPU 2.			

7. What are the effects of using a processor with a faster clock speed?

More instructions carried out per second and so instructions are executed more quickly, which allows for more programs to be run at the same time. This then allows for more complex processing (e.g. 3D graphics) to be completed in real time.

8. How many cores are in CPU 1?

4 cores.

9. What are the effects of using a processor with more cores?

More instructions carried out simultaneously, the processor can process more instructions at the same time, which allows batches of instructions to be executed more quickly, which allows for more programs to be run at the same time.

10. Which CPU has the bigger cache?

CPU 2.

11. What are the effects of using a processor with a bigger cache?

Version 1 8© OCR 2017

COMPUTER SCIENCE

More space for frequently used instructions / data, more storage for very fast access, meaning faster fetching of instructions – so faster processing, meaning faster fetching of data – so faster processing.

Version 1 9© OCR 2017

12. W	/hat is	meant	by an	embedded	system?
-------	---------	-------	-------	----------	---------

A computer system that is built into another device.

13. What is the purpose of embedded systems?

To provide specific, pre-defined function which is cheaper than providing a personal computer system. It doesn't include unnecessary features, can be made much smaller than a personal computer system, allows for a device to be automated / programmed.

- **14.** Provide three examples of embedded systems.
 - Dishwasher
 - MP3 player
 - Washing machine
 - Mobile phone
 - Manufacturing equipment
 - Sat Nav
- 15. What are the purposes of the following components in the CPU?
 - ALU

Arithmetic & logic unit, used to perform arithmetic calculations (e.g. add, subtract, multiply), used to perform logical operations (e.g. <, >, =, !=).

Control Unit

Control the flow of data within the CPU (i.e. between registers), control input and output of data to/from the CPU, controls the timing of signals sent within the CPU.

Cache

Version 1 10© OCR 2017

COMPUTER SCIENCE

Stores frequently used instructions and data, built onto the CPU, provides faster access than RAM, allows instructions and data to be loaded into the CPU more quickly.

Version 1 11© OCR 2017

COMPUTER SCIENCE

This formative assessment resource has been produced as part of our free GCSE teaching and learning support package. All the GCSE teaching and learning resources, including delivery guides, topic exploration packs, lesson elements and more are available on the qualification webpages.

If you are looking for examination practice materials, you can find Sample Assessment Materials (SAMs) on the qualification webpage: Computer Science (9-1)

We'd like to know your view on the resources we produce. By clicking on 'Like' or 'Dislike' you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click 'Send'. Thank you.

Whether you already offer OCR qualifications, are new to OCR, or are considering switching from your current provider/awarding organisation, you can request more information by completing the Expression of Interest form which can be found here: www.ocr.org.uk/expression-of-interest

Looking for a resource? There is now a quick and easy search tool to help find free resources for your qualification: www.ocr.org.uk/i-want-to/find-resources/

OCR Resources: the small print

OCR's resources are provided to support the delivery of OCR qualifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these recourses.

© OCR 2017 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work. OCR acknowledges the use of the following content: n/a

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: resources.feedback@ocr.org.uk

Version 1