

“3-a-day” A-Level Exam Practice Unit 2 (007)

Question 1

7 When a house is being built, the following activities take place:

- plans are drawn
- foundations are laid
- bricks are ordered
- bricks are delivered
- walls are built
- windows are installed
- electric wiring is installed
- plumbing is installed
- roof rafters are installed
- tiles are put on roof.

(a) Describe the term *pipelining*.

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Question 2

(b) Explain how pipelining principles can be used to ensure that a house is built as quickly as possible.

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..... [4]

Question 3

Give an example of where pipelining is used in a computer system (2)

Answer 1

7	(a)	<ul style="list-style-type: none"> Data/processes arranged in a series output of one is input of next. 	2 AO1.1 (2)	Up to 2 marks for a valid description.
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Answer 2

	(b)	<ul style="list-style-type: none"> Look for processes that can be processed at the same time (1) processes that must be sequential (1). Example of possible parallel processes, e.g. windows installed at same time as electrics/plumbing (1). Example of an obligatory sequence e.g. rafters installed before tiles put on/walls before roof (1). 	4 AO2.1 (4)	Up to 4 marks for a valid explanation. Allow any correct examples for the last 2 mark points.
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Answer 3

	(c)	<ul style="list-style-type: none"> Instruction processing (1) - some processors allow parts of instructions to be processed (1) without waiting to complete the whole instruction cycle (1). 	4 AO2.1 (4)	1 mark for each correct identification up to a maximum of two identifications plus up to a further 1 mark for each of two valid descriptions.
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