



1 A washing machine has a small display screen built into it.

One use of the display screen is to show an error code when a problem has occurred with a washing cycle.

(a) State whether the display screen is an **input**, **output** or **storage device**.

.....[1]

(b) The display screen shows a hexadecimal error code:

**E04**

This error code means that the water will not empty out of the washing machine.

Convert this error code to binary.

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[3]

(c) State why hexadecimal is used to display the error code.

.....  
.....  
.....  
.....[1]

(d) Identify **three** sensors that could be used in the washing machine.

State what each sensor could be used for.

Sensor 1 .....

Use .....

Sensor 2 .....

Use .....

Sensor 3 .....

Use .....

[6]



4 Six components of a computer system and six descriptions are shown.

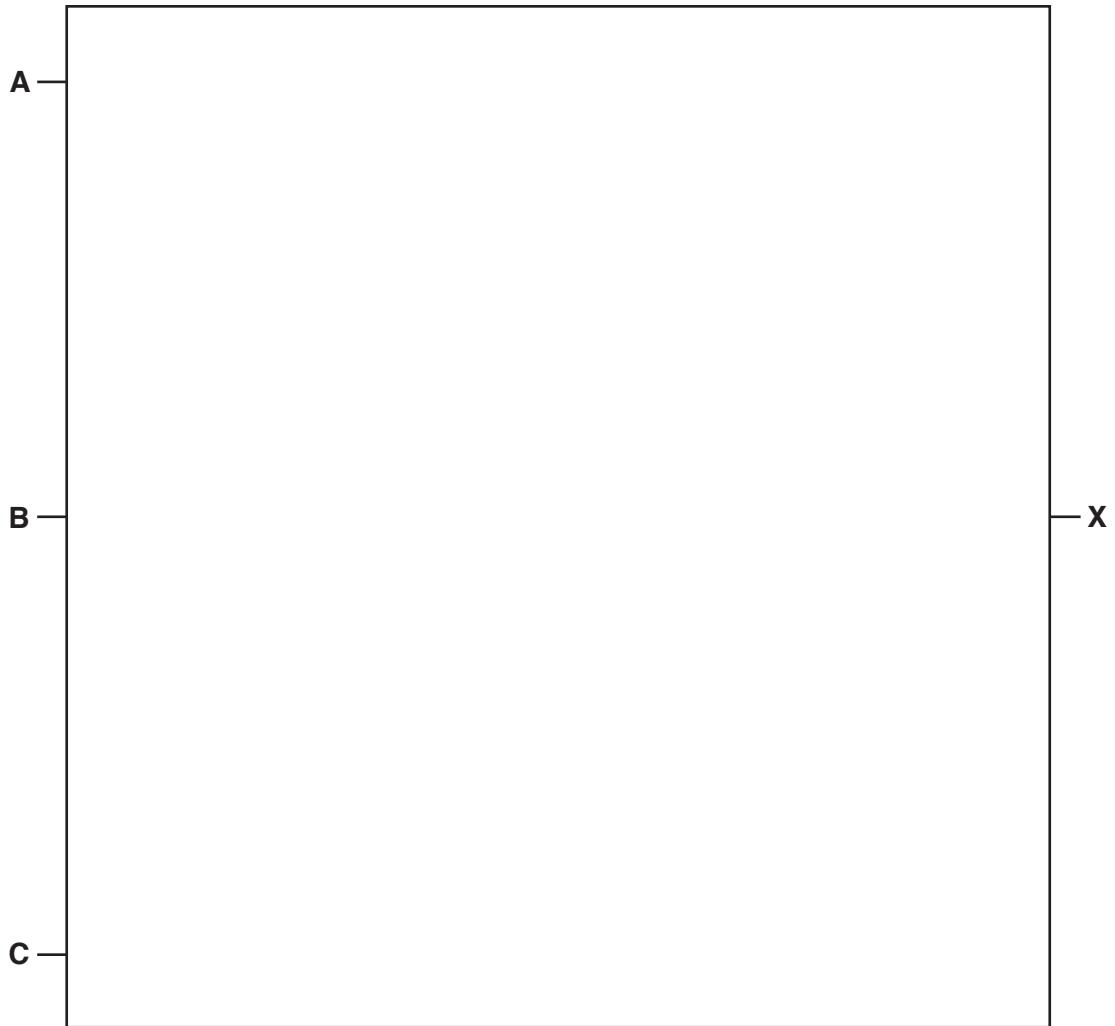
Draw a line to match each component with the most suitable description.

Component	Description
Arithmetic Logic Unit (ALU)	Used to connect together the internal components of the CPU.
Buses	Used to carry out calculations on data.
Control Unit (CU)	Used to temporarily hold data and instructions during processing.
Immediate Access Store (IAS)	Used to allow interaction with the computer.
Input/Output	Used to hold data and instructions before they are processed.
Registers	Used to manage the flow of data through the CPU.

[5]

5 (a) Draw a logic circuit for the logic statement:

$X = 1$  if ((A is 1 AND B is 1) OR (A is NOT 1 AND C is 1))



[4]



7 Six statements about firewalls are shown.

Tick (✓) to show whether each statement is **true** or **false**.

Statement	true (✓)	false (✓)
Firewalls can monitor incoming and outgoing traffic.		
Firewalls operate by checking traffic against a set of rules.		
Firewalls cannot block access to a certain website.		
Firewalls can be software and hardware.		
Firewalls can act as intermediary servers.		
Firewalls can block unauthorised traffic.		

[6]

8 (a) Data is valuable. It needs to be kept secure and it can easily be damaged.

Give **three** different ways that data can be accidentally damaged.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) The Secure Socket Layer (SSL) protocol can be used to securely transmit data in online banking.

State **three** other different applications that use SSL.

Application 1 .....

Application 2 .....

Application 3 .....

[3]



(c) Online banking is increasing in popularity.

Online banking can be a risk as it can raise a number of security issues. SSL can be used as a security method to make online banking safer.

Identify and describe **three** other security methods that could be used to make online banking safer.

Security method 1 .....

.....

.....

.....

Security method 2 .....

.....

.....

.....

Security method 3 .....

.....

.....

.....

[6]



10 Six statements about assembly language are shown.

Tick (✓) whether the statement is **true** or **false**.

Statement	true (✓)	false (✓)
Assembly language uses mnemonic codes.		
Assembly language programs do not need a translator to be executed.		
Assembly language is a low-level programming language.		
Assembly language is specific to the computer hardware.		
Assembly language is machine code.		
Assembly language is often used to create drivers for hardware.		

[6]

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