Unit 1 Hardware

4 components	of a CPU	
ALU		
	A storage location found on the CPU where data or control information is temporarily stored	n
Controller/ CU		

4 registers	
	A counter that keeps track of the memory address of which instruction is to be executed next.
ACC	
	The address in main memory that is currently being read or written.
	A temporary holding area for the instruction that has just been fetched from memory.

Embedded systems	Examples: 1- washing machine
1- Uses a combination of hardware and software	
2-	2-
3-	3-



Method 1= Clock speed

1-

2-

CPU performance can be measured by...



Method	2-		
wethoa	/=		

1- More than 1 instruction can be processed at the same time

2-

	Me	thod 3=_		_
	1-			
ie	2-			

Harvard and Vor	n Neumann architectures
Harvard	1- Data and instructions are stored in separate locations2-
Von Neumann	1- A single control unit will process instructions/data one at a time2-

RAM		ROM	These are known as
Memory ca written	an be read and	Memory can only b	pe read from
			memory

CPU buses	
Address bus	
	Data is loaded/saved on this line

Secondary storage



Name:

Brief description of its characteristics:

1_

2-

Name:

Brief description of its characteristics:

1- Has no moving parts

2-



Name:

Brief description of its characteristics:

1-

2-

Name:

Brief description of its characteristics:

1-

2- Saving data to an off site location

	Symbol	Value
Byte		8
Kilobyte		1024 Bytes
Megabyte		
Gigabyte		
Terabyte		
Petabyte	РВ	
Exabyte		1024 PB
Zettabye		1024 EB

Other hardware components



Motherboard is a device that:

Is the main circuit board of a computer.

The _____ & ____ will be mounted on the motherboard and have expansion slots and other ports for devices

GPU- Is a microprocessor that performs the calculations needed to produce graphic images on screen by rapidly manipulating and change memory. There are 2 types of GPU. They are:

Characteristic:

Type: Integrated

Characteristic:



Sound card

Converts ______ to digital data and reverse this for audio output

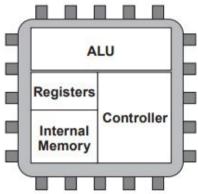
CISC & RISC architectures

CISC	1- Are commonly found in desktop devices
	2-
	3-
RISC	1- Are commonly found in mobile devices
	2-
	3-

Unit 1 Hardware

Starting with the smallest, complete the table, numbering the units from 1 to 5 in order of data storage capacity. The smallest unit has been completed for you.

The diagram below shows four compo	nents of a Central	Processing Unit	(CPU). State a
purpose of each component.		2000 CO 10 CO	[4]



Describe RISC type processors.	[2]

Units	Order (1-5)
Gigabyte	
Yottabyte	
Byte	1
Exabyte	
Kilobyte	

	Describe the characteristics of 3 secondary storage devices [6]
ALU	
Registers	
Internal Memory	
Controller	Cache size, clock speed and number of cores are the three main factors that affect performance. Describe how performance is affected by these three
(a) State what is meant by the term ROM. [1]	factors. [6]
(b) State a feature of ROM and give an example of its use. [2]	

Buses allow data to be transferred to different parts of the computer. Name the two main buses that are used by the CPU. [2]	

CU

Unit

ardware	



2-

lethod 1= _		
ictiioa i	 	

2-

Method 2= Cores

CPU performance can be measured by...



Method = cache

1- the faster the rate the system can provide instructions to the CPU

2-

4 components	of a CPU
ALU	
	Fast access temporary storage
Controller/	

4 registers	
PC- Program counter	
	Holds the answer to calculations
MAR	

	1- washing machine
1- Uses a combination of hardware and software	
2-	2-
3-	3-

Harvard and Von Neumann architectures							
Harvard	1- Data a	ınd instru	ıctions ar	e stored	in separate lo	cations	
	2-						
Von Neumann	1-						
	2-						

	ROM	These are known as primary
Volatile=	Non volatile=	memory

CPU buses	
Address	
Control	



Name: Magnetic memory

Brief description of its characteristics:

1-

2-

Name:

Brief description of its characteristics:

1- Has no moving parts

2-



Name:

Brief description of its characteristics:

1-

2-

Name:

Brief description of its characteristics:

1.

2- Saving data to an off site location

	Symbol	Value
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Kilobyte		1024 Bytes
Megabyte		
Gigabyte		
Terabyte		
Petabyte	РВ	
Exabyte		
Zettabye		

Other hardware components



GPU- Is a microprocessor that		
There are 2 types of GPU. They are:		
Type:	Type:	
Characteristic:	Characteristic:	
Uses the computer's RAM		



____ card

This converts ______ to _____ data and reverse this for audio output

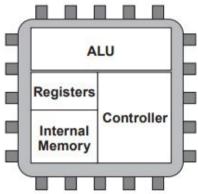
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