

4 components of a CPU

ALU	
	A storage location found on the CPU where data or control information is temporarily stored
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

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

Examples:

- 1- washing machine
- 2-
- 3-



Method 1= Clock speed

- 1-
- 2-



CPU performance can be measured by...



Method 3= _____

- 1-
- 2-

Method 2= _____

- 1- More than 1 instruction can be processed at the same time
- 2-

Harvard and Von Neumann architectures

Harvard	1- Data and instructions are stored in separate locations 2-
Von Neumann	1- A single control unit will process instructions/data one at a time 2-

RAM	ROM	These are known as _____ memory
Memory can be read and written	Memory can only be read from	

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	PB	
Exabyte		1024 PB
Zettabyte		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

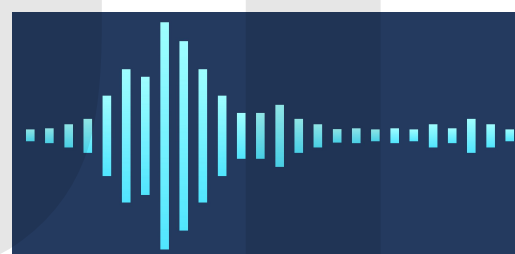
GPU- Is a microprocessor that performs the calculations needed to produce graphic images on screen by rapidly manipulating and change memory. There are 2 types of GPU. They are:

Type: _____

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-

4 components of a CPU

ALU	
	Fast access temporary storage
Controller/ CU	

4 registers

PC- Program counter	
	Holds the answer to calculations
MAR	

1- Uses a combination of hardware and software

2-

3-

Examples:

1- washing machine

2-

3-



Method 1= _____

- 1-
- 2-

CPU performance can be measured by...



Method = cache

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

- 2-

Method 2= Cores

- 1-
- 2-

Harvard and Von Neumann architectures

Harvard	1- Data and instructions are stored in separate locations
	2-
Von Neumann	1-
	2-

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

CPU buses

Address	
Control	

Secondary storage



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
Byte		8
Kilobyte		1024 Bytes
Megabyte		
Gigabyte		
Terabyte		
Petabyte	PB	
Exabyte		
Zettabyte		

Other hardware components



Motherboard is a device that:

GPU- Is a microprocessor that _____

There are 2 types of GPU. They are:

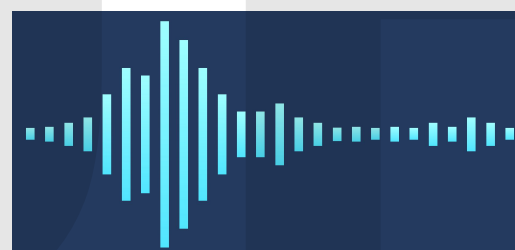
Type: _____

Characteristic:

Uses the computer's RAM

Type: _____

Characteristic:



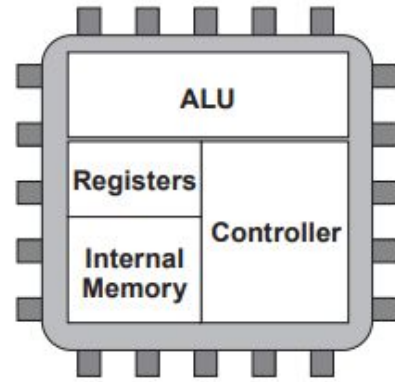
_____ card

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

CISC & RISC architectures

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

The diagram below shows four components of a Central Processing Unit (CPU). State a purpose of each component. [4]



ALU

 Registers

 Internal Memory

 Controller

(a) State what is meant by the term ROM. [1]

(b) State a feature of ROM and give an example of its use. [2]

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

Describe RISC type processors. [2]

.....

Describe the characteristics of 3 secondary storage devices [6]

.....

 Cache size, clock speed and number of cores are the **three** main factors that affect performance. Describe how performance is affected by these **three** factors. [6]

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