CPU parts – name and describe

1.

2.

3.

4.

CPU revision

Fetch decode execute cycle

Fetch:

Decode:

Execute:

Draw – CPU Diagram with correct shapes

CPU performance

Cache – 1. what it is?
2. How does it affect performance?

Cores –
1. What is a core?
2. How do cores affect performance

Clock speed –
1. What is clock speed
2. How does clock speed affect performance?

REGISTERS – name them and explain what they do

**********important YOU MUST KNOW THIS!!!!***********

1.   (a)   Describe the purpose of the CPU.   [2]

....

....

....
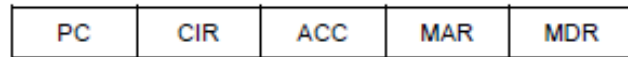
Award one mark for each of the following up to a
maximum of two marks:
- The purpose of the CPU is to process
  instructions consisting of:
  - simple arithmetic
  - and logical operations.

(b) The CPU uses different registers to store data resulting from the fetch-decode-execute cycle.

| PC | CIR | ACC | MAR | MDR |

Choose two registers and state their purpose.

Program counter (PC)
- stores the memory location of the next instruction that will be needed by the processor

Current instruction register (CIR)
- stores the instruction that is currently being executed by the processor

Accumulator (ACC)
- stores the results of calculations made by the ALU

Memory address register (MAR)
- stores the memory location where data is currently being written to or read from

Memory data register (MDR)
- stores the data that is being transferred from memory to the CPU (or vice versa).

(i)   [1]

Register: ....

Purpose: ....

....

....

(ii)   [1]

Register: ....

Purpose: ....

....

....

Jordan is a gamer considering purchasing a new computer system.

Jordan is considering the following two specifications:

Specification A	Specification B
Processor:	**Processor:**
• Quad-core	• Dual-core
• 2.5 GHz	• 3.5 GHz
• 1 MB cache	• 2 MB cache
• 4 GB RAM	• 8 GB RAM
• 1 TB Hard Disk Drive	• 128GB Solid State Drive
• 135dB Gaming Sound Card	• 116dB Gaming Sound Card
• 1080p Integrated GPU	• 1080p Dedicated GPU

(a) Give one reason for choosing Specification A or B based on the follow aspects alone:

(a) Give one reason for choosing Specification A or B based on the following aspects alone:

(I) Number of cores [1]

2.(a)(I)	• Spec A has a quad-core CPU, which means it is able to process four instructions at the same time, whereas Spec B is a dual-core CPU and two instructions may be processed at the same time.
2.(a)(II)	• Spec B has 8GB of RAM, which means it is able to store more currently running programs than Spec A which only has 4 GB of RAM.
2.(a)(III)	• Spec B has a dedicated GPU which means that the processing of games won't be hindered like an integrated GPU which shares its processing with a CPU.

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