

Zahid Notes

1st Year Computer Science

Chapter 3: Central Processing Unit

Federal Board (FBISE) | Proper Notes for Exam Preparation

PROPER NOTES IN ENGLISH: Detailed explanations, examples, solved short and long answers, MCQs and a revision plan.

These notes are written in original words for practice and exam preparation. They are not a copy of the official textbook and they are not a board paper. Students should also read the textbook, because board questions come from the prescribed syllabus.

1. Introduction and Detailed Explanation

The CPU is the brain of the computer. It understands instructions, performs work on them, and tells other parts what to do.

The CPU has three main parts. The ALU performs calculations and comparisons. The Control Unit controls all operations. Registers are small, fast places inside the CPU where data is kept during work.

The work of the CPU takes place in a cycle: Fetch, Decode and Execute. First an instruction is fetched, then it is understood, and then it is carried out. This cycle repeats millions of times in a second.

The ALU in Detail

The Arithmetic Logic Unit performs addition, subtraction, multiplication, division and comparisons such as greater than or less than. Without the ALU, a computer could not calculate anything.

The Control Unit in Detail

The Control Unit does not calculate itself. It controls the flow of data and instructions. It tells memory when to give data, tells the ALU when to calculate, and tells output devices when to show the result.

Clock Speed

Clock speed shows how fast a CPU can work. It is measured in hertz. A higher clock speed usually means that the CPU can complete more cycles in one second, so work becomes faster.

2. Important Definitions

ALU

Arithmetic Logic Unit, which performs calculations and logical comparisons.

Control Unit

The part that controls instructions and manages the flow of data.

Register

A small, fast memory inside the CPU that holds data during work.

Clock Speed

The speed of the CPU, shown by how many cycles it completes in one second.

3. Solved Short Questions

Q1. What is a CPU?

The CPU is the brain of the computer. It processes instructions and controls other parts.

Q2. What is the work of the ALU?

The ALU performs calculations and logical comparisons.

Q3. What does the Control Unit do?

It controls the flow of instructions and data and gives directions to other parts.

Q4. What is the Fetch-Decode-Execute cycle?

First an instruction is fetched, then it is decoded or understood, and then it is executed.

Q5. What is a register?

A register is a small, fast place inside the CPU where data is kept during work.

4. Solved Long Questions

Q1. Describe the parts of the CPU and their work.

The CPU has three main parts. The ALU performs arithmetic and logical work, such as addition and comparison. The Control Unit controls the whole system. It directs data and instructions to the right place at the right time. Registers are small, fast storage places inside the CPU. They hold data and instructions for a very short time during processing. Together, these three parts make the CPU able to understand a program, perform its work, and give a correct result.

5. MCQs, Fill in the Blanks and True / False

1. The CPU is called:

- A. The heart of the computer
- B. The brain of the computer
- C. The hand of the computer
- D. The eye of the computer

Correct answer: B

2. Calculations are performed by:

- A. The Control Unit
- B. The ALU
- C. The Monitor
- D. The Keyboard

Correct answer: B

3. Fetch means:

- A. To take an instruction
- B. To show a result
- C. To delete data
- D. To print

Correct answer: A

6. Important Points and Revision Plan

CPU = brain, ALU = calculations, CU = control

Fetch, Decode, Execute = CPU cycle

Registers = small, fast memory inside the CPU

- Read the detail once and write the definitions in your own words.

- Write the short and long answers yourself, then match them with the notes.
- Solve the MCQs and read the important points box again before the test.