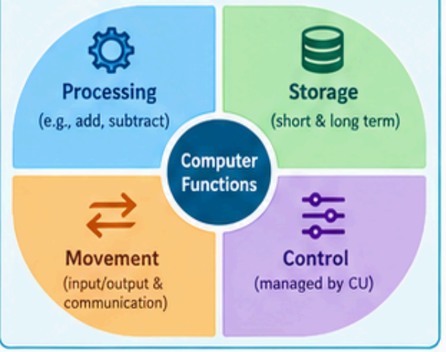
CA Tutorial 1 & 2
2026-2027 1st term

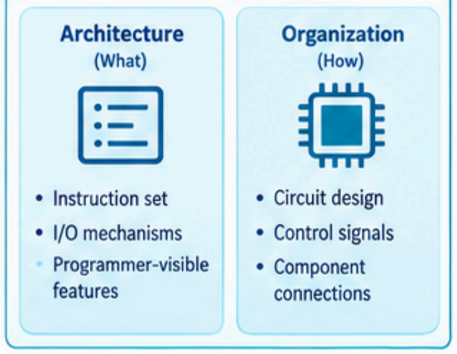
Q1. Choose the Correct Answer

No.	Correct Answer	Brief Explanation
1	A. Logic	Computer architecture includes the logical design and functional behavior of a computer system.
2	A. Data processing	A computer processes data to produce useful information.
3	A. To manage the computer's resources	The Control Unit (CU) coordinates and directs the operations of the computer's components.
4	A. Being introduced in 1970	IBM System/370 was introduced in 1970 and supported upgrades while preserving software compatibility.
5	A. Explain computer arithmetic hardware blocks	One objective of the course is to understand hardware blocks used for arithmetic operations.

The Four Basic Functions



Architecture vs Organization



IBM System/370 (1970)



- Multiple models
- Upgrade without abandoning software
- Protected software investment
- Improved technology with compatibility

Significant step in mainframe computing

Course Objectives (Quick View)

- Hardware – Software interface
- Arithmetic hardware & floating-point
- Execution of hardware languages
- Performance factors & improvement
- Memory hierarchy

1. What does computer architecture involve?

A. Logic
B. Physical Components
C. Data storage
D. Control

2. What is one of the basic functions a computer can perform?

A. Data processing
B. Data encryption
C. Data visualization
D. Data analysis

3. What is the purpose of the control unit in a computer?

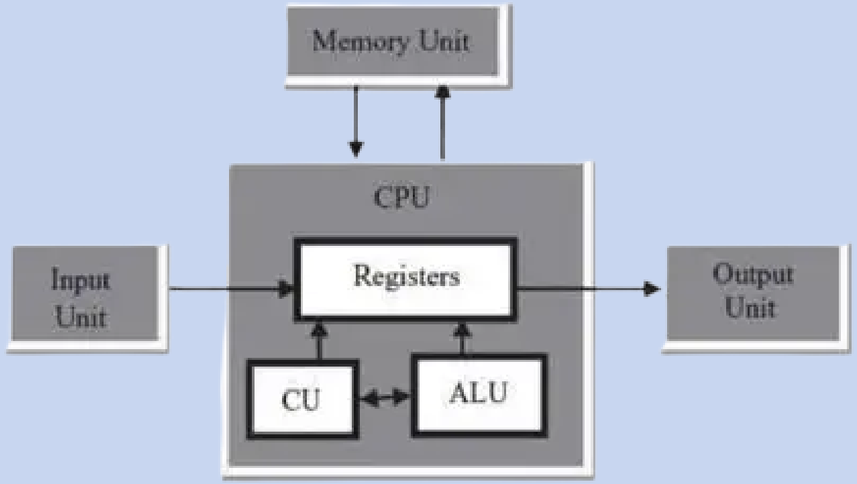
A. To manage the computer's resources
B. To store data
C. To process data
D. To communicate with peripherals

4. What is the IBM System/370 architecture known for?

A. Being introduced in 1970
B. Being the first computer
C. Having no upgrade options
D. Being a personal computer

5. What is one objective of the course mentioned in the document?

A. Explain computer arithmetic hardware blocks
B. Design video games
C. Create mobile applications
D. Develop web pages



Q2. Answer the Following Questions

1. The four basic functions that a computer can perform

Data processing
Performing operations on data (e.g., addition, subtraction).

Data storage
Saving data temporarily or permanently.

Data movement
Transferring data between devices or systems.

Control
Coordinating and managing all operations.

2. Significance of the IBM System/370 architecture (1970)



IBM System/370 (1970)

Allowed users to upgrade to faster models without abandoning their existing software.

✓ This protected customers' software investments and provided improved technology with compatibility.

3. Difference between Computer Architecture and Computer Organization

Computer Architecture	Computer Organization
Describes the features visible to the programmer.	Describes how the hardware implements those features.
Includes the instruction set and I/O mechanisms.	Includes circuit design, control signals, and connections between components.
Focuses on what the computer does.	Focuses on how the computer works.

Example: The instruction set defines which operations a processor supports (architecture), while the design of its circuits determines how those operations are performed (organization).

Questions:

1. What are the four basic functions that a computer can perform?

2. What is the significance of the IBM System/370 architecture introduced in 1970?

3. Explain the difference between computer architecture and computer organization.

1.1 What is the distinction between computer organization and computer architecture?

Computer architecture: The features of a computer visible to the programmer, such as the instruction set and addressing methods.

Computer organization: How the hardware components implement the architecture, including circuits, control signals, and connections.

1.2 What is the distinction between computer structure and computer function?

Computer structure: How the components of a computer are interconnected.

Computer function: The operation performed by a component or by the computer as a whole.

1.3 What are the four main functions of a computer?

- **Data processing:** Performing operations on data.
- **Data storage:** Storing data and instructions.
- **Data movement:** Transferring data between the computer and external devices or between systems.
- **Control:** Coordinating computer operations.

1.4 List and briefly define the main structural components of a computer.

- **Processor (CPU):** Executes instructions and controls operations.
- **Main memory:** Stores programs and data currently in use.
- **Input/Output (I/O):** Transfers data between the computer and external devices.
- **System bus:** Connects the processor, memory, and I/O components and carries information between them.

1.5 List and briefly define the main structural components of a processor.

- **Control Unit (CU):** Directs and coordinates processor operations.
- **Arithmetic and Logic Unit (ALU):** Performs arithmetic operations and logical comparisons.
- **Registers:** Small, fast storage locations inside the processor that hold data, instructions, and intermediate results.