Computer System Architecture

Tutorial 1:

1. Give two examples for Computer Architecture and Computer Organization.
2. Give the meaning of structure and function in each level of computer system.
3. State the 4 function of computer.
4. What is the function of data processing in computer?
5. Which type of process involves all 4 function of Computer?
6. What is the main structure of the CPU? Explain function of the structures.
7. What is the switches used in the EDVAC?
8. What is the main different of IBM 7094 with the IAS computer?
9. What are the two elements used in integrated circuits for processing and storage?
10. What is the main disadvantage of ferromagnetic material memory?

Tutorial Answer:

1. Instruction set and I/O mechanism are computer architecture. Control signals and memory technology are computer organization.
2. Structure is the way the components in the level are interrelated. Function is the operation of each individual component as part of the structure.
3. Data processing, data storage, data movement and control.
4. Processing data in storage or between storage and external environment.
5. The processing of data between the storage and the external environment involve all 4 functions of computer.
6. i. Control unit: Controls the operation of the CPU and hence the computer.

ii. Arithmetic and logic unit (ALU): Performs the computer’s data processing functions.

iii. Registers: Provides storage to the CPU internally.

iv. CPU interconnection: Provides communication between control unit, ALU and registers.

1. Vacuum tube is used as the switches in EDVAC.
2. The main different is the used of data channels is introduced in the IBM 7094.
3. Gates and memory cells
4. The ferromagnetic material memory has destructive readout. The memory will be destroyed after the read and a rewrite circuit is required in the system.