

# 40 Lecture - CS302

## Important Subjective

### 1. What is meant by decoding large memories?

Answer: Decoding large memories refers to the process of addressing and accessing a large amount of memory in a computer system.

### How does row-column addressing work in decoding large memories?

Answer: Row-column addressing is a technique used for addressing large memories by organizing memory cells into rows and columns. Each row and column is assigned a unique address that can be used to access specific cells in the memory.

### What is the advantage of multiplexed addressing?

Answer: The main advantage of multiplexed addressing is that it allows for efficient access to large memories by using a smaller number of address lines to access a larger amount of memory.

### How does memory controller facilitate decoding of large memories?

Answer: The memory controller is responsible for managing and controlling access to the memory subsystem, which includes decoding large memories. It ensures that data is retrieved from and stored in memory in an efficient and timely manner.

### What is the maximum amount of memory that can be addressed using a 64-bit system?

Answer: The maximum amount of memory that can be addressed using a 64-bit system is 16 exabytes (EB).

### What are the different types of memory used in modern computer systems?

Answer: The different types of memory used in modern computer systems include random access memory (RAM), cache memory, read-only memory (ROM), hard disk drives (HDD), and solid-state drives (SSD).

### What is the role of memory hierarchy in computer systems?

Answer: Memory hierarchy refers to the organization of memory into different levels, each with different access times and capacities. The role of memory hierarchy is to provide fast and efficient access to frequently used data while minimizing the cost of memory.

### What is the difference between volatile and non-volatile memory?

Answer: Volatile memory requires power to retain data, whereas non-volatile memory can retain data even when power is removed. Examples of volatile memory include RAM, while examples of non-volatile memory include ROM and flash memory.

### What is the role of virtual memory in modern computer systems?

Answer: Virtual memory is a memory management technique that allows a computer to use more memory than it physically has by using the hard disk as a temporary storage area. It enables multiple programs to run simultaneously, each with their own virtual address space.

### What is the importance of memory bandwidth in decoding large memories?

Answer: Memory bandwidth refers to the amount of data that can be transferred between the

memory and the CPU in a given amount of time. A high memory bandwidth is important for decoding large memories because it allows for faster retrieval and processing of data.