**SESSION**

**JUL/AUG 2021**

**PROGRAMME**

**MASTER OF COMPUTER APPLICATION (MCA)**

**SEMESTER**

**I**

**COURSE CODE & NAME**

**DCA6105 - COMPUTER ARCHITECTURE**

 **Set- I**

**1. What do you understand by parallelism in computer architecture? Discuss the different classes of parallelism and parallel architecture.**

**Ans.** Before taking a toll on Parallel Computing, first, let’s take a look at the background of computations of computer software and why it failed for the modern era.

Computer software was written conventionally for serial computing. This meant that to solve a problem, an algorithm divides the problem . Its Half solved only

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**2**. **Describe the instruction cycle and its various phases.**

# Ans: Instruction Cycle: A program residing in the memory unit of a computer consists of a sequence of instructions. These instructions are executed by the processor by going through a cycle for each instruction.

In a basic computer,

**3. What do you understand by pipelining? Recommend any real scenario where the pipeline concept can be applied**

**Ans. Pipelining:** Pipelining is a process of arrangement of hardware elements of the CPU such that its overall performance is increased. Simultaneous execution of more than one instruction takes place in a pipelined

 **Set- II**

**4. What do you understand by Memory-Hierarchy? Discuss the types of Memory-Hierarchy**

Ans. The memory in a computer can be divided into five hierarchies based on the speed as well as use. The processor can move from one level to another based on its requirements. The five hierarchies in the memory are registers, cache, main memory, magnetic discs, and magnetic tapes. The first three hierarchies are volatile memories which mean when there is no power, and then automatically they lose their stored data. Whereas the last two hierarchies are not volatile which means

**5. What do you understand by Parallel Processing? Also explain Serial Processor and True Parallel Processor.**

**Ans.** Parallel processing is a method in computing of running two or more [processors](https://whatis.techtarget.com/definition/processor) (CPUs) to handle separate parts of an overall task. Breaking up different parts of a task among multiple processors will help reduce the amount of time to run a program. Any system that has more than

**6. Summarize the usage of Cache only Memory Access (COMA) and Non-Uniform Memory Access (NUMA) in the following circumstances**

**a. Global Address Space usage**

**Ans.** **NUMA (Non Uniform Memory Access):** They are intended for avoiding the memory access disadvantage of Uniform Memory