**SESSION MARCH/APRIL 2023**

**PROGRAM MASTER OF COMPUTER APPLICATIONS (MCA)**

**SEMESTER I**

**COURSE CODE & NAME DCA6105 – COMPUTER ARCHITECTURE**

**CREDITS 4**

**1. (A) What are the different stages of evolution of Computer Architecture? Explain in detail.**

**Ans:Zeroth Generation Computers:** The zeroth generation of computers (1642-1946) was distinctly made available by the invention of largely mechanical computers. In 1642, a French mathematician named Blaise Pascal invented the first mechanical device which was called Pascaline. In 1822, Its Half solved only

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whatsapp no 8791490301.

**(b) Explain difference between process and thread. Explain process state diagram in detail.**

**Ans:In computing,** a process is an instance of a computer program that is being executed by a computer system. It consists of an executable code, memory space, system resources, and a set of data that the program is currently processing. A process is managed by the operating system, which allocates and

**2. (a) Explain zero, one, two and three address instruction with the help of given instruction X= (A\*B) + (C-D)**

**Ans:**

In computer programming, an instruction is a statement that tells the computer what to do. There are different types of instructions, such as zero address, one address, two address, and three address instructions, which differ based on the number of operands they requ

**3. (A) Explain different types of Hazards in pipelining.**

**Ans:** There are three major categories of hazards that can affect normal operation of a pipeline.

**1. Structural hazards (also called resource conflicts):** They occur from resource conflicts when the hardware cannot support all possible combinations of instructions in simultaneous overlapped

**SET-II**

**4. (A) Explain direct and associative mapping in detail.**

**Ans:Direct mapping**

Associative memories are very costly as compared to RAM due to the additional logic association with all cells. Generally there are 2j words in main memory and 2k words in cache memory. The j-bit memory address is separated by 2 fields. K bits are used for index field. J-k bits are long-fie

**5. (A) Explain fine-grained and coarse-grained architecture. Discuss differences between them.**

**Ans:** In computer architecture, the terms fine-grained and coarse-grained refer to the level of granularity or detail in the design of a system. These terms are used to describe the level of concurrency and parallelism in the architecture, and they have a significant impact on the performance and scalability o

**6. (a) What is RAID? Explain different levels of RAID.**

**Ans:RAID** is the acronym for ‘redundant array of inexpensive disks’. There are several approaches to redundancy that have different overhead and performance. The Patterson, Gibson, and Katz 1987 paper introduced the term RAID. It used a numerical classification for these schemes that has