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| **SESSION** | **MAY 2023** |
| **PROGRAM** | **BCA** |
| **SEMESTER** | **III** |
| **course CODE & NAME** | **DCA2103, Computer Organization** |
| **CREDITS** | **4** |

**Set-I**

**1. Explain von Neumann Architecture in detail.**

**Ans:** The von Neumann architecture is a computer architecture design that serves as the basis for most modern computers. It was proposed by John von Neumann in the late 1940s and has since become the foundation for the majority of general-purpose computers.

**The key characteristics**

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**2. Explain in detail the different instruction formats with examples.**

**Ans: Instruction Formats**

Instruction Format is defined as the layout of bits in an instruction in terms of its constituent parts. An Instruction Format must include opcode implicitly or explicitly and one or more operand(s). For, most instruction sets have usually more than one instruction format.

**Instruction Length**

**3. Discuss the organization of main memory.**

**Ans:** The organization of main memory, also known as primary memory or RAM (Random Access Memory), plays a crucial role in computer systems. Main memory is responsible for storing data and instructions that are actively being accessed by the CPU during program execution. It serves as a temporary storage medium and provides fast access to data, enabling efficient

**Set-II**

**4. Define Cache Memory. List and explain the mapping functions.**

**Ans: Cache memory** is a small, fast, and expensive type of memory that is located closer to the CPU than main memory. Its purpose is to store frequently accessed data and instructions, reducing the average time taken to access data from the slower main memory. Cache memory acts as a buffer between the CPU and main memory, improving overall system performance by reducing memory

**5. Define an interrupt. Discuss the hardware actions in interrupt handling.**

**Ans:** An interrupt is a signal emitted by a device attached to a computer or from a program within the computer. It requires the operating system (OS) to stop and figure out what to do next. An interrupt temporarily stops or terminates a service or a current process.

With Interrupt driven I/O, the CPU issues a command to I/O module and it does not wait until I/O operation is

**6. Explain the characteristics of RISC and CISC architectures.**

## Ans: RISC Characteristics

Let's take a closer look at some of the characteristics of RISC one at a time.

**1. Small and Limited Numbers of Instructions**

As explained earlier, to increase the speed and performance of RISC, a limited number of frequently