**2.) What is the significance of three state buffer gates?**

Three-state buffers used to enable multiple devices to communicate on a data bus can be functionally replaced by a multiplexer. That will help select output from a range of devices and write one to the bus.

**3.) List the phases of an instruction cycle.**

It is composed of three main stages: the fetch stage, the decode stage, and the execute stage.

**4.) Define the terms micro-operations, micro instructions, and micro program.**

**Micro-operation:** an elementary digital computer operation.

Micro-operations (also known as a micro-ops or µops) are detailed low-level instructions used in some designs to implement complex machine instructions (sometimes termed macro-instructions in this context).

**Micro-instruction:** an instruction stored in control memory

A micro-instruction is a simple command that makes the hardware operates properly.  The format is unique to each computer

**Micro-program**: Sequence of microinstructions.

**5.) Specify the format of microinstruction.**

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**7.) What is binary adder?**

A Binary Adder is a digital circuit that performs the arithmetic sum of two binary numbers provided with any length.

**8.) What is mapping process?**

The transformation from the instruction code bits to an address in control memory where the routine is located is referred to as a mapping process.