Assignment : 4

1] Explain the concept of instruction pipeline and give it's Hazard

⇒. ① A micro-processor carries in-total 4 major task

(1.1) : Fetching   (1.2) Decoding

(1.3) Executing   (4) writing.

② It processor takes new common when the previous complete all of it four process then it may consume too much of the time

③ so to reduce this time pipeline processor are used, in which instructions are handled in multiple ple stages, and due to which the total time required is considerably reduced.

pipeline Hazard

① There are 2 major pipeline Hazard

→ Data Hazard

→ Control Hazard

2] Write short note on PCI, ISA and USB Bus

⇒ i) PCI : Peripheral component interconnect (PCI) was designed by commitee of computer scientists set up by IBM and other computer companies as universal international standard for 32-bit interface for 32-bit system. architecture.

ii] ISA

- Industry standard Architecture is parallel bus standard. design by IBM for providing international standardised Interfacing capabilities to the system boards for it's original 1st generation Personal Computer (PC's)

iii] Universal Series Bus (USB)

- Universal serial Bus (USB) is international universal bus / port Interface standard for connecting peripheral and I/O devices with computer system & works on the synchronous serial data communication protocol and technique

3] Explain bus contention and arbitration

⇒ ① A conflicts may arise if no. of DMA controllers or any other controller or processors try to access the common bus, at the same time but access can be given to only one of those. If there are multiple bus master assigned to bus immediately, multiple signals would be mixed on the buss this would lead to arise to naiy and hardware damage this called bus contention

② Bus Arbitration refer to process by which current bus masters access and then leaves control of the bus and passes it to another bus requesting processor and controller that hass access to but of an instance is known as Bus master