

**Computer Organisation and Architecture**

Time : 3 Hours]

[Max. Marks : 40

**Note : Attempt all questions.**

1. (a) What is meant by Computer Architecture? Differentiate it with Computer Organization?

(b) What is Von-Neuman Model of Computer? Explain its features.

**OR**

(a) What is Basic Instruction Cycle? Draw instruction cycle state diagram.

(b) What is the benefit of using Multiple bus architecture compared to Single bus architecture?

2. (a) Explain the difference between Auxillary Memory and Associative Memory.

(b) What is meant by Memory address map? Explain with an example.

**OR**

(a) What is Cache Memory? Explain the basic design of Cache.

(b) Explain Associate memory organization and draw its block diagram.

3. (a) What do you mean by Addressing Mode? Explain any two addressing modes with the help of example.

(b) Explain Instruction Format. How instructions are executed in the system?

**OR**

(a) Explain role of general purpose registers in CPU's Bus Interface Unit.

(b) Explain Instruction Pipelining? Why is it used?

4. (a) What do you mean by Micro Operations? Explain its utility.

(b) Explain basic concept of Microprogrammed Control. How it is different than Hardwired Control?

**OR**

(a) Explain applications of Microprogramming.

(b) Write details of Micro Instruction Sequencing and Execution.

5. (a) Write short notes on any four of the following :

(i) Programmed I/O

(ii) Interrupt-Driven I/O

(iii) I/O Channels

(b) What do you mean by DMA? Explain with the help of suitable example.

**OR**

(a) Explain the External Interface Concept with reference to Programmed I/O.

(b) What do you mean by MESI Protocol Vector Computation?

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