3RD SEM./AI & ML./CS & E./IT/ 2024(W)

TH1 Computer System &Architecture

Full Marks: 80 **Time- 3 Hrs**

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

   a. Define Hit ratio.

   b. What do you mean by RISC and CISC?

   c. Define throughput of a system.

   d. What is program counter?

   e. Write down the functions of ALU.

   f. Define USB.

   g. What is opcode and operand?

   h. Write down two examples of peripheral devices.

   i. Write an expression for speed up in pipeline.

   j. Define SCSI.

2. Answer **Any Six** Questions 5 x 6

   a. Explain difference types of instruction format with example.

   b. Compare between I/O mapped I/O and Memory mapped I/O.

   c. How an instruction is executed? Explain the steps of each cycle.

   d. Explain working principle of cache memory.

   e. Define Bus. Write the functions of data bus, address bus and control bus.

   f. Distinguish between hardwired control and micro programmed control.

   g. Explain the working principle of DMA.

Answer **Any Three** Questions

3. What do you mean by addressing modes? Explain all types of addressing mode. 10

4. Define parallel processing. Briefly describe Flynn's classification. 10

5. Explain memory hierarchy with suitable diagram. 10

6. Write short notes on 5+5
   I. Virtual memory
   II. Interrupt driven I/O

7. Explain the basic functional units of a computer with suitable diagram. 10