

3RD SEM /AI & ML/ CS & E / IT/2023(W) NEW

Th-1 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 address bus.
 - b. Define SISD & SIMD.
 - c. What is cache?
 - d. Mention what are the different types of fields that are part of an instruction?
 - e. What is the function of I/O channel?
 - f. What is the function of memory unit?
 - g. What do you mean by Interrupt?
 - h. What is the function of a register?
 - i. Define paging.
 - j. Differentiate between response time and elapsed time.
2. Answer **Any Six** Questions 6 x 5
 - a. Explain the basic parameters of bus design.
 - b. Define opcode and operand. Explain the instruction formats.
 - c. What do you mean by virtual memory? Explain.
 - d. Differentiate between RISC and CISC.
 - e. Identify the components of computer system and explain. Write the performance measure.
 - f. Define ROM. Describe the ROM integrated circuit with diagram.
 - g. Define I/O Processor. Explain the characteristics of IOP.
3. What do you mean by memory hierarchy? Describe different types of memory used. Explain their characteristics. 10
4. Define the function of control unit. What do you mean by microprogram control? How it is different from hardware control? 10
5. Identify the techniques/modes which make data transfer to and from peripherals. Explain DMA method of data transfer by a suitable diagram. 10
6. Identify the advantages of parallel processing. What is a pipeline? Draw a space time diagram to show how an instruction is executed. 10
7. Write short notes(any two) 10
 - I) Multiprocessor
 - II) Interleaved memory
 - III) Addressing mode
 - IV) Flynn's Classification