3RD SEM CSE/IT 2020(W) NEW

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.	What is Virtual Memory.	
	b.	Define throughput of a system.	
	c.	Define USB.	
	d.	Define SCSI.	
	e.	What do you mean by opcode and operand in an instruction.	
	f.	What is the principle of locality.	
	g.	What is clock cycle.	
	h.	Define subroutine.	
	i.	Define macro.	
	j.	Define hit rate.	
2.		Answer **Any Six** Questions	5 x 6
	a.	Define instruction format. Explain different instruction formats.	
	b.	Explain the instruction cycle to execute one instruction in a computer system briefly.	
	c.	Explain the memory interleaving technique with suitable example.	
	d.	Differentiate CISC and RISC processor.	
	e.	Distinguish between hardware control and microprogrammed control.	
	f.	Explain working principle of DMA.	
	g.	Define interrupt. Explain interrupt driven IO.	
	h.	Define pipeline. Explain pipeline execution in processor briefly.	
3		Explain classification of memory in a computer.	10
4		Write the function of bus. Explain the single bus structure briefly with suitable diagram.	2+6+2
5		Define addressing mode? Explain at least six addressing modes with suitable example.	1+1.5 x 6
6		Explain the Functional Units of computer	10
7		Write short notes on,	10
	i.	Fixed word length memory.	
	ii.	Variable word length memory.	
	iii.	Big endian assignment	
	iv.	Little endian assignment	

III-SEM./CSE/IT/ 2021(W)

TH-I 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. What is computer architecture?
   b. What are the different types of field contain in an instruction format?
   c. Define indexed addressing mode.
   d. What is the requirement of page table?
   e. What is the use of RAID system?
   f. Define the types of micro operations.
   g. Define MIPS.
   h. Define MAR & MDR.
   i. Define hit ratio.
   j. What is parallel processing?

2. Answer **Any Six** Questions 5X6
   a. Differentiate between SRAM & DRAM.
   b. Explain the different address instruction format.
   c. Comparison between I/O mapped I/O & memory mapped I/O.
   d. How an instruction is executed? Explain the steps of each cycle.
   e. Why cache memory is needed? Explain the mapping procedures of cache memory.
   f. Explain five addressing modes with suitable example.
   g Explain the working principle USB protocol.

3 What is pipelining? Draw the space time diagram to represent the processing in a pipeline. 10

4 Define interrupt. Explain interrupt initiated I/O method of data transfer to and from peripherals. 10

5 Describe the FLYNN's classification. 10

6 What is bus structure? Explain the basic parameter of bus design. Write the function of each type of bus. 10

7 Draw a functional block diagram of a computer and explain the function of each unit. 10

5TH SEM./CSE/IT/ 2022(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 clock rate.
   b. State the function of accumulator.
   c. What does RISC and CISC stands for?
   d. What do you mean by cycle stealing?
   e. State the amdahl's law.
   f. What is volatile memory?
   g. Define polling.
   h. Differentiate between direct and indirect addressing modes.
   i. What is multiprocessor?
   j. Define the term computer architecture.

2. Answer **Any Six** Questions 6 x 5
   a. Explain the different instruction format with a suitable example.
   b. Draw a functional block diagram of a computer and explain the function of each unit.
   c. How an instruction is executed? Explain the steps of instruction cycle.
   d. Explain the segmentation technique used in virtual memory with a suitable example.
   e. Define interrupt service routine. Explain the characteristics of interrupt handling mechanism.
   f. Explain in detail multiple bus architecture.
   g Define RAM. Discuss different types of RAM.

3 Illustrate how memory addressing and memory operation is done in a personal computer. 10

4 Identify the most popular method of data transfer. Explain interrupt driven I/O method of data transfer. How it is different from programmed I/O data transfer? 10

5 Classify organisation of computers using Flynn's criteria 10

6 Explain in detail SCSI Bus standards. How it is different from USB? 10

7 Define pipeline. Describe the different types of pipeline hazards 10