Code: 20A05303

R20

B.Tech II Year I Semester (R20) Supplementary Examinations April/May 2024

COMPUTER ORGANIZATION

(Common to CSIT, IT, AI&DS, CSE(AI), CSE(DS), CSE(AI&ML), CSE(IOT), CSE(CS) and CSE)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Define multiprocessor.	2M
	(b)	What is full adder?	2M
	(c)	Define fetch cycle.	2M
	(d)	What is direct addressing?	2M
	(e)	Define main memory.	2M
	(f)	What is virtual memory?	2M
	(g)	What is hardware interrupt?	2M
	(h)	What is DMA?	2M
	(i)	What is parallel processing?	2M
	(j)	What is pipelining?	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	Explain the role of stack in evaluating arithmetic expression.	10M
	OR	
3	Explain various types of instruction formats with example.	10M
4	Explain the design of multi-bus organization of CPU.	10M
	OR	
5	How to represent floating point numbers in computer.	10M
6	Describe virtual memory using demand paging.	10M
	OR	
7	Explain mapping procedures to implement cache memory.	10M
8	How DMA is used for bulk amount of data transfer between computer and peripheral devices?	10M
	OR	
9	Explain asynchronous data transfer mechanisms.	10M
10	Explain the role of array processors in parallel processing.	10M
	OR	
11	Discuss about pipeling.	10M

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B.Tech II Year I Semester (R20) Supplementary Examinations August/September 2023

COMPUTER ORGANIZATION

(Common to CSE (CS), IT, CSE, CSE (AI), CSE (AI&ML), AI&DS, CSE (IOT) and CSE (DS))

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	Draw the basic functional units of a computer.	2M
	(b)	Compare Multi-Processor and uniprocessor.	2M
	(c)	Define Instruction Format.	2M
	(d)	Compute BCD Adder.	2M
	(e)	Relate about virtual memory.	2M
	(f)	Justify mapping procedures adopted in the organization of a Cache Memory.	2M
	(g)	What is function of about DMA controller?	2M
	(h)	Invent about Priority Interrupt.	2M
	(i)	What are the major characteristics of a pipeline?	2M
	(j)	What is parallel processing?	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Explain about instruction cycle.	5M
	(b)	Organize any three best addressing modes with example.	5M
		OR	
3		Prioritize different functional units of a computer.	10M
4	(a)	Perform arithmetic operation on binary using 2's complement representation: (i). (+42) + (-13) (ii) (-42) – (-13).	5M
	(b)	Convert the following numbers with the indicated bases to decimal; (i) $(12121)_3$ (ii) $(4310)_5$ (iii) $(50)_7$.	5M
		OR	
5	(a)	Describe the importance of encoders.	5M
	(b)	Evaluate floating point representation.	5M
6		Examine the following: (i) Memory mapped I/O. (ii) I/O Registers. (iii) Hardware Interrupts.	10M
		OR	
7	(a)	Compose associate memory with block diagram.	5M
	(b)	Determine mapping procedures of cache memory.	5M
8	(a)	Elaborate interrupt with suitable example.	5M
	(b)	Distinguish isolated versus memory.	5M
		OR	
9	(a)	Justify virtual memory and its importance.	5M
	(b)	Examine TLB with necessary diagram.	5M
10	(a)	Classify array processors.	5M
	(b)	Discover Interconnection structures.	5M
		OR	
11		(i) Describe the data and control path techniques in pipelining (ii) Prove inter processor communication	10M

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