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CMRIT
* CMR INSTITUTE OF TECHNOLOGY, BENGALURU.
ACCREDITED WITH A+ GRADE BY NAAC

Internal Assessment Test 1 – September 2018

Sub:	Advanced Computer Architecture					Sub Code:	15CS72	Branch:	CSE		
Date:	23/9/2019	Duration:	90 min's	Max Marks:	50	Sem / Sec:		7th-A,B,C		OBE	

	Answer any FIVE FULL Questions	MARKS	CO	RBT
1 (a)	Explain Flynn's Classification of Computer architecture along with neat diagram.	[08]	CO1	L2
(b)	Describe the 5-tuple operational model of SIMD supercomputers.	[02]	CO4	L2
2 (a)	Explain the architecture of Vector Supercomputer with a neat diagram.	[08]	CO1	L3
(b)	Describe AT^2 model for VLSI.	[02]	CO1	L2
3 (a)	Explain UMA Model and COMA Model for shared memory multiprocessor systems with neat diagram	[06]	CO1	L3
(b)	Describe the Bernstein's conditions of Parallelism.	[04]	CO4	L2
4	Explain different types of Dependences in program. Analyze the dependences for following code segment and draw dependence graph and assume there is only one functional unit for Load and Store. Note M (10) contains value 64. S1: Load R1,1024 S2: Load R2,M(10) S3: Add R1,R2 S4: Store M(1024),R1 S5: Store M((R2)),1024	[10]	CO1	L4

5	Explain hardware and software parallelism with an example	[10]	CO1	L2
6 (a)	Compare RISC and CISC with respect to its characteristics and its architectural distinctions.	[06]	CO2	L2
(b)	Differentiate VLIW and Superscalar processor	[04]	CO3	L2
7	Explain CISC scalar processor with an example.	[10]	CO2	L2
8	What is memory hierarchy? Explain Inclusion, Coherence and Locality properties with neat diagram	[10]	CO2	L3

CO PO Mapping

	Course Outcomes	Modules covered	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	Explain different computer architecture and concepts of parallelism	1,4,5	3	1	1	-	-	1	-	-	-	-	-	-	-	2	-	-
CO2	Compare major processor families and pipeline implementations.	2,3	3	1	1	-	-	1	-	-	-	-	-	-	-	2	-	-
CO3	Describe the hardware technologies of computer system along with complete understanding of the memory and memory hierarchy.	2,3	3	1	1	-	-	1	-	-	-	-	-	-	-	2	-	-
CO4	Explain the concepts of parallel and scalable architecture.	1,4	3	1	1	-	-	1	-	-	-	-	-	-	-	2	-	-
CO5	Describe about parallel programming models, languages, compilers and Instruction and System Level parallelism	1,5	3	1	1	-	-	1	-	-	-	-	-	-	-	2	-	-

COGNITIVE LEVEL	REVISED BLOOMS TAXONOMY KEYWORDS
L1	List, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.
L2	summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend
L3	Apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover.
L4	Analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer.
L5	Assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize.

PROGRAM OUTCOMES (PO), PROGRAM SPECIFIC OUTCOMES (PSO)				CORRELATION LEVELS	
PO1	Engineering knowledge	PO7	Environment and sustainability	0	No Correlation
PO2	Problem analysis	PO8	Ethics	1	Slight/Low
PO3	Design/development of solutions	PO9	Individual and team work	2	Moderate/ Medium
PO4	Conduct investigations of complex problems	PO10	Communication	3	Substantial/ High
PO5	Modern tool usage	PO11	Project management and finance		
PO6	The Engineer and society	PO12	Life-long learning		
PSO1	Develop applications using different stacks of web and programming technologies				
PSO2	Design and develop secure, parallel, distributed, networked, and digital systems				
PSO3	Apply software engineering methods to design, develop, test and manage software systems.				
PSO4	Develop intelligent applications for business and industry				