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CMRIT
CELEBRATING 25 YEARS
CMR INSTITUTE OF TECHNOLOGY, BENGALURU.
ACCREDITED WITH A+ GRADE BY NAAC

Internal Assessment Test II – October 2019

Sub:	Advanced Computer Architecture					Sub Code:	15CS72	Branch:	CSE		
Date:	14/10/2019	Duration:	90 min's	Max Marks:	50	Sem / Sec:		7th-A,B,C		OBE	

		MARKS	CO	RBT
Answer any FIVE FULL Questions				
1 (a)	Explain the following terms for System Interconnect architecture. a) Node Degree b) Bisection Width c) Static Connection Networks d) Data Routing Functions e) Crossbar Networks	(05)	CO1	L2
(b)	Explain different levels of processing and how parallelism can be exploited at each level.	(05)	CO4	L2
2 (a)	Explain the following Multistage Networks given below with neat diagram a) Omega Network b) Baseline Network	(10)	CO1	L2
3 (a)	Explain Crossbar network with neat diagram	(08)	CO1	L2
(b)	Compare Tree and Fat Tree topology	(02)	CO1	L3
4 (a)	Explain the following a) Degree of Parallelism and Parallelism Profile b) Average Parallelism	(04)	CO4	L2
4(b)	Explain the following topologies with neat diagram. a) Barrel Shifter b) Cube Connected Cycle	(06)	CO1	L2

5	Explain Backplane Bus Specification with neat diagram.	(10)	CO3	L3
6 (a)	Explain characteristics of the parallel algorithm	(06)	CO1	L2
(b)	Write note on following benchmarks. 1. Dhrystone 2. Whetstone	(04)	CO1	L2
7 (a)	Explain all the application models and efficiency curve with neat diagram	(08)	CO1	L2
(b)	What is Torus Topology? What are advantages of Folded Torus over Torus?	(02)	CO1	L3
8	Explain Amdahl's law with neat diagram	(10)	CO4	L2

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				