R18

Code No: 155AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2024

ADVANCED COMPUTER ARCHITECTURE

(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

1.a)	Define Multivector and SIMD Computers.	[2]
b)	Explain the theory of Parallelism.	[3]
c)	List the principals of Scalable performance.	[2]
d)	Give a note on speed up performance laws.	[3]
e)	What is cache and shared memory?	[2]
f)	What is Arithmetic pipeline?	[3]
g)	Write the Vector Processing Principals.	[2]
h)	Briefly describe Compound Vector processing.	[3]
i)	List the advantages of the multithreading.	[2]
j)	Write the Latency-hiding techniques	[3]

PART – B

(50 Marks)

2.a)	Describe the Architectural development tracks.	
b)	Give a note on the Program flow Mechanisms.	[5+5]
	OR	
3.	Explain the program partitioning and Scheduling.	[10]
4.a)	Describe the Parallel Processing applications.	
b)	Give a note on Performance metrics and measures.	[5+5]
	OR	
5.	Explain the Advanced Processor Technology.	[10]
6.a)	Discuss the Arithmetic pipeline design.	
b)	Elaborate on the linear pipeline processor in computer architecture.	[5+5]
	OR	
7.	Illustrate the Non-Linear Pipeline Processors.	[10]
8.	Discuss the SIMD computer Organizations.	[10]
	OR	
9.	Explain the Multivector Multiprocessors.	[10]

10.a) List and explain the Principals of Multithreading.

b) Discuss the Fine-Grain Multicomputer. [5+5]

OR

11. Explain the scalable, Multithreaded and Dataflow Architectures. [10]

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