R18

Code No: 155AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, July/August - 2023

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 the theory of parallelism.	[2]
b)	List and explain about multiple data tracks.	[3]
c)	Discuss about parallel processing applications.	[2]
d)	What are the performance metrics?	[3]
e)	Define cache memory.	[2]
f)	Explain about superscalar pipeline.	[3]
g)	Define cache coherence.	[2]
h)	Write down the principles of vector processing.	[3]
i)	What is scalability in computer architecture?	[2]
j)	Discuss about multithreaded architecture.	[3]

PART – B

(50 Marks)

2. With a neat diagram, explain in detail about the PRAM and VLSI models. [10]

OR

3. Elaborate in detail about the various program and network properties in computer architecture. [10]

4. List and explain in detail about the levels in a typical memory hierarchy. [10]

OR

5. Explain the concepts of superscalar and vector processors in detail. [10]

6. With a neat diagram, describe the three shared memory multi-processor models. [10]

OR

7. Compare and contrast between the linear and nonlinear pipeline processors. [10]

8. With a neat diagram, describe the implementation models of SIMD. [10]

OR

9. Give an example to explain in detail about various message passing mechanisms. [10]

10. Explain in detail about the various concepts of fine-grained multicomputer. [10]

OR

11. What is data flow architecture? List and explain various types of dataflow architectures. [10]

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