

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

FIRST SEMESTER – NOVEMBER 2009

CS 1807 - PARALLEL PROCESSING & ALGORITHMS

Date & Time: 16/11/2009 / 1:00 - 4:00 Dept. No.

Max. : 100 Marks

PART – A

ANSWER ALL THE QUESTIONS

10X2=20

1. Draw the tree showing architectural evolution from sequential scalar computers to vector processors and parallel computers.
2. Differentiate between implicit and explicit parallelism.
3. Define the term degree of parallelism.
4. List out any four characteristics of parallel algorithms which are machine implementable.
5. Write down the four phases of a typical instruction execution cycle.
6. What is temporal locality?
7. Give out the two basic mechanisms for interprocess communication.
8. What is optimization features.
9. What is merging?
10. List down the types of sorting.

PART – B

ANSWER ALL THE QUESTIONS

5X8=40

11. a) Draw the architecture of a vector super computer and explain .
(Or)
11. b) Differentiate between multiprocessor and multi computers.
12. a) Write in short about average parallelism..
(Or)
12. b) List out the grand challenge application areas.
13. a) Write down the difference between non-linear pipeline processor and linear pipeline Processor.
(Or)
13. b) Give brief notes on pipelined instruction processing.
14. a) Write down the requirements of critical section.
(Or)
14. b) Explain elementary transformation with an example.
15. a) Write in brief about Computational model.
(Or)
15. b) Write short notes on Merging.

PART – C

ANSWER ANY TWO QUESTIONS

2X20=40

16. a) Discuss in detail Flynn's classification.
b) List out the basic metrics affecting the scalability of a computer system for a given Application.
17. a) What is locality of references? List out the properties of locality.
b) Write in detail about categorized dependence test.
18. a) Illustrate basic block scheduling with an example.
b) Explain in detail about the selection method with examples.
