G 1677

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Reg. No.....................................

Name..

B.TECH. DEGREE EXAMINATION, MAY 2016

Eighth Semester

Branch : Computer Science and Engineering

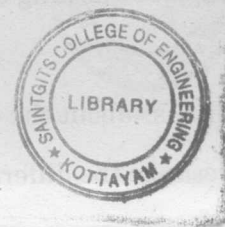CS 010 801—HIGH PERFORMANCE COMPUTING (CS)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 marks.

1. State Amdahl's law.

2. Mention the principles of linear pipelining.

3. Write the features of Mesh connected networks.

4. Give the advantages in using non-uniform memory access model.

5. What is meant by grain packing and scheduling in parallel processing ?

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 marks.

6. List any *five* contributions of Indians to parallel processing.

7. What is meant by interleaved memory organisation ? Explain.

8. Write a note on circuit and packet switching protocols.

9. Distinguish between loosely coupled and tightly coupled multiprocessors.

10. Briefly explain about data flow computers.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each question carries 12 marks.

11. Explain any *two* architectural classification schemes in detail.

Or

12. Elaborate on the different parallel computer structures.

13. Discuss about arithmetic pipelines with necessary examples and diagram.

Or

14. Demonstrate how internal forwarding enhances the performance of computers with examples.

15. Explain masking and data routing mechanisms in SIMD array processor with diagram.

Or

16. Discuss about the different parallel algorithm in SIMD architectures.

17. Describe the different bus arbitration algorithm in multiprocessors.

Or

18. Elaborate on the interprocess communication mechanism used in multiprocessor architectures.

19. Explain the following :—

    (i) Data driven computers.

    (ii) Data flow languages.

Or

20. Discuss the influences of dataflow in conventional architectures.

(5 × 12 = 60 marks)