



- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Diagrams and chemical equations should be given whenever necessary.
 11. Illustrate your answers whenever necessary with the help of neat sketches.
 12. Use of non programmable calculator is permitted.

1. a) Explain Abstract model of parallel computer and also explain about P-RAM with the help of suitable diagram. 7
b) Explain the multiprocessor Architecture in detail and also explain each desirable characteristics of multiprocessors. 6

OR
2. a) Write the basics of pipelining. Explain the classification of pipeline processors. 7
b) Explain the Array processor by the help of suitable diagram. 6
3. a) Define Data Dependency Analysis. what are the various types of Dependencies required to check at the time of Data Dependency Analysis, explain each type with proper example. 8
b) Define and explain program Transformations with examples. 6

OR
4. a) Write the General model of shared memory programming and also explain it's two important constraints. 7
b) How process creation, process Destruction and shared memory allocation done under unix? 7
5. a) What is Parallel Reduction? How Analysis of parallel reduction is performed? 7
b) Write short note on Histrogram Computation. 6

OR
6. a) How matrix multiplication done in Parallel? Explain matrix multiplication on Loosely coupled and tightly coupled multiprocessor. 7
b) Explain different types of parallel sorting Algorithms. 6

7. a) Write the Language features of Fortran go, which are help full for parallel computation. 7
b) Write short note on nCUBEC and Occam. 6
- OR**
8. a) Explain message-passing programming in detail. 7
b) Write about C-Linda with proper example. 6
9. a) What is Debugging? Explain Debugging in Message passing parallel programs by the help of space time diagram. 8
b) Explain Debugging in shared memory parallel programs. 5
- OR**
10. a) Explain in detail circuit satisfiability problem. 7
b) Write short note on virtual memory system. 6
11. a) Define Data Flow Computing. What are the different types of Data flow graphs? Explain the general model of a dynamic data flow machine. 8
b) Write short note on systolic Architectures. 6
- OR**
12. a) Write short note on **any three**. 14
a) Distributed shared memory.
b) Amdahl's law.
c) Karp-Flatt metric.
d) Gustafson-Barsis's Law.
