B.E. (Computer Science & Engineering) Seventh Semester (C.B.S.)
Elective - I : Parallel & Network Algorithms

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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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Classify the parallel computers based on Flynn's taxonomy. **7**

  b) Discuss on space and time complexity in view of parallel computing. **6**

OR

2. a) What is the basic motivation for developing parallel algorithm? How performance of an algorithm is improved in parallel solution. **7**

  b) Define parallel processing? Give the law to measure the performance of parallel processing. **6**

3. a) What is data dependency and control dependency? Which dependency can be solved in parallel processing. **6**

  b) Can the loop converted to other programming construct to achiever parallel forecasting? If yes how. **7**

OR

4. a) What is meant by loop independent dependency? Explain with suitable example. **6**

  b) Explain tiling transformation. **7**

5. a) Binary search can be implemented in parallel processing. Give suitable program using open MP or MPI. **7**

  b) Can bubble implemental in parallel processing why? Give the solution. **7**

OR

6. a) Implement any sorting algorithm in parallel processing environment also measure the speed up of your solution. **7**

  b) Explain Hyper quick sort. **7**

7.	A linear equation of n independent unknown can be solved using Gauss method. Explain steps involved in obtaining parallel program for the same.	**13**

OR

8.	Give analytical approach to find parallel program for roots of non linear equation.	**13**

9.	Explain the design of all pair shortest algorithm in open MP.	**13**

OR

10.	Explain Dijkstra algorithm under parallel processing environment.	**13**

11.	Name and explain any five platforms which can participate in grid computing.	**14**

OR

12.	Explain Breadth first search algorithm under parallel processing environment.	**14**

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