

**Faculty of Engineering & Technology**  
**Seventh Semester B.E. (C.S.E.) (C.B.S.) Examination**  
**Elective—I : PARALLEL AND NETWORK**  
**ALGORITHMS**

Time—Three Hours]

[Maximum Marks—80

**INSTRUCTIONS TO CANDIDATES**

- (1) All questions carry marks as indicated.
  - (2) Solve Question No. **1 OR** Question No. **2**.
  - (3) Solve Question No. **3 OR** Question No. **4**.
  - (4) Solve Question No. **5 OR** Question No. **6**.
  - (5) Solve Question No. **7 OR** Question No. **8**.
  - (6) Solve Question No. **9 OR** Question No. **10**.
  - (7) Solve Question No. **11 OR** Question No. **12**.
  - (8) Due credit will be given to neatness and adequate dimensions.
  - (9) Assume suitable data wherever necessary.
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1. (a) Explain Amdahl's law of measuring speed up performance with the help of an example. 7
  - (b) Discuss on space and time complexity in view of parallel computing. 7

**OR**

2. (a) What are the architectural methods used to increase the speed of computers. 7
- (b) Describe in brief about parallel architectures and topologies. 7
3. (a) Explain loop splitting with example. 7
- (b) Define antidependence and output dependence with respect to parallelism and dependence relation. 6

**OR**

4. (a) Explain in brief about Tiling Transformation. 7
- (b) Can the loop be converted to other programming construct to achieve parallel processing if yes, how ? 6
5. (a) Explain Hyper quick sort. 7
- (b) Give sequential and parallel program for any one sorting method. 6

**OR**

6. Give suitable solution to implement :
- (i) Linear search
- (ii) Binary search in parallel programming environment. 13

7. Write short note on parallel discrete Fourier transform. 13

**OR**

8. Give analytical approach to find parallel program for roots of non-linear equation. 13
9. Explain any one shortest path algorithm under the preview of parallel processing. 13

**OR**

10. Can graph colouring algorithm be parallelised ? Specify your answer. 13
11. Name and explain any five platforms which can participate in grid computing. 14

**OR**

12. Explain depth first search algorithm for parallel processing. Also measure its speedup. 14