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**M. Tech CSE (Semester – 2<sup>nd</sup>)  
ADVANCED ALGORITHMS  
Subject Code: MCSES1201  
Paper ID: 23190210**

**Time: 03 Hours**

**Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A**

**(4 marks each)**

- Q1. Compare between different types of sorting algorithm along with their time complexity.
- Q2. Explain divide and conquer paradigm with an example.
- Q3. Explain the chinese remainder theorem in detail.
- Q4.** Explain in detail randomized algorithm with an example.

**Section – B**

**(8 marks each)**

- Q5. Explain DFS and BFS algorithm in detail with an example.
- Q6. Explain ford-fulkerson method to compute maximum flow with a diagram.
- Q7. Explain in detail floyd-warshall algorithm used in dynamic programming paradigm.
- Q8.** What are the recent trends used in problem solving paradigms using searching and sorting techniques. Explain these trends in detail.

**Section – C**

**(10 marks each)**

- Q9. Explain in detail graph matching algorithm and to compute maximum matching. What are the characterization of maximum matching by augmenting paths, describe it.
- Q10. Explain any one of flow-networks algorithm in detail with an example and a diagram.
- Q11. Explain strassen's algorithm in detail with an example and a diagram.