Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (CSE) (Sem–2)

ADVANCE ALGORITHMS

Subject Code : MTCS-201-18

M.Code : 76055

Date of Examination : 12-06-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1.Attempt any FIVE questions out of EIGHT questions.

2.Each question carries TWELVE marks.

1. Write sequence of steps to find shortest path using Dijkastra's technique with an example.

2. a. How can you find the strongly connected components in a graph?

   b. Explain. What is amortized analysis? Explain in detail with example.

3. What is a greedy algorithm? What are the properties of these algorithms? Explain the concept of Matroids? Give the solution to the maximal independent set problem.

4. Explain the Strassen's Matrix Multiplication algorithm ? Compare its efficiency to the simple matrix multiplication algorithm.

5. What is the method for number representation? Explain number representation theorem. Discuss the method for number to modulo representation conversion in detail. Explain the application of the method via suitable example.

6. **Explain following :**

   a. Chinese Reminder Theorem

   b. Fast Fourier Theorem.

7. Discuss the use of searching algorithms in solving the latest problems.

8. Discuss Edmond Karp maximum flow algorithm.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.