ST. ANDREWS INSTITUTE OF TECHNOLOGY & MANAGEMENT, GURUGRAM, (HARYANA)

INTERNAL ASSESSMENT EXAMINATION JULY 2020

SEMESTER: 6TH SEM

BRANCH: CSE

SUBJECT NAME: Analysis & Design of Algorithms

SUBJECT CODE: CSE-306 F

TIME: 2 HOURS	**Max. Marks: 50**

NOTE: **Attempt 5 questions. First question is compulsory. All the questions carry equal marks.**

Q1. WRITE THE SHORT NOTE ON THE FOLLOWING   (5*2)

    (i)   Divide and conquer method

    (ii)   Recursive Relations

    (iii)   Asymptotic notation

    (iv)   Branch and Bound technique

    (v)   Job Sequencing with deadline

Q2. (i) What is travelling salesman problem? How it is solved by using Dynamic Programming?

    (ii) What do you mean by Strassen's matrix multiplication? Explain its complexity?

Q3. What do you mean by Knapsack and 0/1 Knapsack Problem? How Knapsack Problem is solved by Greedy approach? Explain with suitable example?

Q4. (i) What do you mean by optimal binary search tree? Explain with suitable example?

    (ii) What is Graph colouring? Explain with its algorithm. Also give some suitable example?

Q5. Difference between backtracking and dynamic programming? How backtracking is used for solving the 8-queen Problem?

Q6. (i) State and Prove cook's Theorem?

    (ii) Differentiate between NP-Hard and NP-Complete Problem. Explain with suitable example?