No. of Printed Pages : 03 **Roll No. .....**

II-342

Dual Degree B. Sc. (Hons.)
Mathematics-M.Sc. Mathematics
EXAMINATION, Dec. 2017

(Ninth Semester)

(Main & Re-appear)

MAT-613-H

ANALYSIS AND DESIGN OF ALGORITHM

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Explain Quick sort algorithm with example. Explain and analyze its complexity in best, average and worst cases. **15**

2. What do you mean by Strassen's Multiplication ? Explain its complexity. **15**

Unit II

3. What do you mean by Knapsack problem ? How is it solved by Greedy approach ? Explain with suitable example. **15**

4. Discuss Optimal Binary Search Tree with suitable example. **15**

Unit III

5. Explain Graph coloring with algorithm and example. **15**

6. What is Branch and bound strategy ? How it solves travelling salesperson problem ? **15**

Unit IV

7. Explain the following problem : NP, NP complete, NP Hard. List various NP Complete Problems. **15**

8. Write a note on Cook's Theorem. **15**