

This question paper contains 2 printed pages]

AI—211—2017

FACULTY OF SCIENCE

M.Sc. (First Year) (First Semester) EXAMINATION

MARCH/APRIL, 2017

COMPUTER SCIENCE

Paper CS-103

(Design Analysis of Algorithm)

(Tuesday, 25-4-2017)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

N.B. :— All questions carry equal marks.

1. Attempt any *three* of the following : 15
 - (a) Explain different types of data structure.
 - (b) What is an algorithm ? Explain time and space complexity of algorithm.
 - (c) Explain binary search.
 - (d) Explain optical storage on tapes.
 - (e) Explain general method of dynamic program.
2. Attempt any *three* of the following : 15
 - (a) Explain general method of divide and conquer technique.
 - (b) Explain optical binary search tree using dynamic programming.
 - (c) Explain minimum spanning tree in greeding method.
 - (d) Write an algorithm for breadth first search.
3. Attempt any *three* of the following : 15
 - (a) Explain multistage graph with an example.
 - (b) Explain general method of divide and conquer technique.
 - (c) What is graph coloring ? Explain in detail.
 - (d) Explain Strassen's matrix multiplication.

P.T.O.

4. Attempt any *three* of the following : 15
- (a) Explain general method of dynamic programming.
 - (b) Explain 8 queens problem in detail.
 - (c) Explain travelling salesperson problem with an example.
 - (d) Explain the concept of binary tree traversal technique.
5. Write short notes on any *three* : 15
- (a) Shortest path
 - (b) Job sequencing with deadline
 - (c) DFS
 - (d) Sum of subsets
 - (e) Hamiltonian cycle.