



K18U 1451

Reg. No. :

Name :

V Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)
Examination, November 2018
(2014 Admn. Onwards)
CORE COURSE IN COMPUTER SCIENCE (Elective)
5B12CSC (E01) : Algorithm Analysis and Design

Time : 3 Hours

Max. Marks : 40

SECTION – A

1. One word answer :

(8×0.5=4)

- A _____ is a round trip path along the edges of a graph that visit every vertex once and return to its starting position.
- In m-colourability optimization, the smallest integer for which the graph can be coloured is known as _____
- A graph is said to be _____ if and only if it can be drawn in a plane in such a way that no two edges cross each other.
- O notation stands for _____
- In backtracking, tree organisation of the solution space is called _____
- A feasible solution that either maximises or minimises a given objective function is called _____
- Time complexity of quick sort is _____
- Procedure that calls itself is called _____

SECTION – B

Write short note on **any seven** of the following questions :

(7×2=14)

- Explain principle of optimality.
- Define Huffman code.
- Write short note on divide and conquer method.

P.T.O.



5. What is control abstraction ?
6. What are the characteristics of an algorithm ?
7. Define spanning tree.
8. Define performance analysis.
9. Compare dynamic and static state space tree.
10. What is meant by definiteness and finiteness of an algorithm ?
11. Briefly describe greedy method.

SECTION – C

Answer **any four** of the following questions :

(4×3=12)

12. Briefly describe sum of subsets problem.
13. Define algorithm. How to analyze algorithms ?
14. Write short note on asymptotic notations.
15. Write an algorithm for finding maximum and minimum items in a set of 'n' elements using divide and conquer method.
16. Write an algorithm for depth first search.
17. Briefly describe single source shortest path.

SECTION – D

Write an essay on **any two** of the following questions :

(2×5=10)

18. Explain Prim's algorithm to find minimum cost spanning tree.
 19. Explain Backtracking. Write general iterative algorithm for backtracking.
 20. Explain Strassen's matrix multiplication in detail.
 21. Explain Graph colouring in detail.
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