S4 CSE

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Mid Semester Examination – March 2019

Course: S.Y.B.Tech(CSE) **Sem: II**

Subject Name: Design & Analysis of Algorithms **Subject Code: BTCOC401**

Max Marks: 20 **Date:- 11/Mar/2019** **Duration:- 1 Hr.**

Instructions to the Students:

1. Check that you have received a correct Question paper.
2. Assume suitable data if necessary and mention it clearly

Q.1. Attempt any **six Questions** (1*6 = 6 Marks)

1. Which of the following asymptotic notation is the worst of all?

   a) O(n+9999) b) O (n^3) c) O(log (n)) d) O (2n)

2. Two main measures for efficiency of algorithm are :

   a) Processor & Memory b) Complexity & capacity

   c) Time & space d) Data & space

3. Which of the following does not exist in complexity theory?

   a) Best case b) Worst case c) Average case d) Base case

4. Merging 4 sorted files containing 50, 10, 25 and 15 records will take optimal _____time.

   a) O (200) b) O(100) c) O(175) d) O (150)

5. Define Feasible & optimal solution of Greedy algorithm.
6. Dijkstra's algorithm is also called _____ shortest path problem.

   a) Multiple source b) Single source

   c) Single destination d) Multiple destination

7. State necessary criterion for a recursive function.

Q. 2. Attempt any **two** of the following (2*3 =6 Marks)

A. Explain Divide & Conquer strategy of algorithm development.

B. Consider the following instances of the Knap-Sack problem:

n=3,m=20,(p1,p2,p3)=(24,25,15) and (w1,w2,w3)=(18,15,20).

Find feasible solutions.

C. Obtain optimal solutions for the following jobs:

Jobs	J1	J2	J3	J4
Deadline	2	1	2	1
Profit	27	100	15	10

[P.T.O]

Q.3. Attempt any **one** of the following (1* 8 = 8 Marks)

A. Construct heap tree for following list of numbers.

20,10,30,50,60,20,35,40,50,25,80 & perform heap sort.

B. Write a program for Merge Sort.

END