

54 CSE

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERGA
Mid Semester Examination – March 2019

Course: S.Y.B.Tech(CSE)
Subject Name: Design & Analysis of Algorithms
Max Marks: 20
Date:- 11/Mar/2019
Sem: II
Subject Code: BTCOC401
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