

Anjuman Islam Janjira Degree College of Science Murud-Janjira, Raigad-402401 Affiliated to University of Mumbai	
Class: -F.Y.B.Sc C.S	Subject: - Design and Analysis of Algorithm
Semester:- II	Course code: -USCS201
Exam Event:- Summer 2024 (FH)	Marks: -75
Date: - 16/04/2024	Duration: - 02:30 Hours

N.B. – 1 – All questions are compulsory.

2 – All questions have internal choice.

3 – Figures to the right indicate full marks.

Q1. Answer the following question. (Any 4 out of 6)

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- 1) Give the Advantages and disadvantages of array.
- 2) What are the Characteristics of an algorithm with example.
- 3) Explain Analysis of algorithm.
- 4) What are the types of complexity?
- 5) Explain Types of data structure.
- 6) What are the types of analysis?

Q2. Answer the following question. (Any 4 out of 6)

20

- 1) What is recursion and recursive function?
- 2) Discuss Tower of Hanoi.
- 3) Explain Bubble sort.
- 4) What is selection sort method?
- 5) Describe insertion sort.
- 6) Explain the linear search.

Q3. Answer the following question. (Any 4 out of 6)

20

- 1) Write the classification of algorithm by implementation method.
- 2) What is greedy technique? Write the advantages, disadvantages and applications with example.
- 3) Define Divide-n-conquer. Write the advantages, disadvantages and applications.
- 4) What is merge sort? Write the steps for algorithm and example.
- 5) Elaborate dynamic programming? Write the advantages, disadvantages and applications with example.
- 6) Write the classification of algorithm by Design method.

Q4. Answer the following question. (Any 5 out of 6)

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- 1) Give the Advantages and disadvantages of Linked list.
- 2) What are the Advantages and disadvantages of stack.
- 3) Discuss searching and binary search.
- 4) Explain partition based selection and finding the (k)th smallest element.
- 5) State and Explain Dynamic Programming in detail.
- 6) Elaborate merge sort.