S. B. Roll. No..

ANALYSIS AND DESIGN OF ALGORITHMS
6th Exam/CSE/4495/Jun'2022
(For 2018 Batch Onwards)

Duration: 3Hrs.   **M.Marks:75**

SECTION-A

Q1. Give answer in one line.   **15x1=15**
- a. What is algorithm?
- b. Expand DFS.
- c. Write any two sorting algorithms?
- d. Write the time complexity of selection sort in worst case.
- e. What are types of Asymptotic Notations?
- f. What are the types of Heap?
- g. What is greedy algorithm?
- h. What are the steps used in DAC technique?
- i. Which method is used in Heap Sort?
- j. Write the applications of greedy algorithm?
- k. Expand BFS.
- l. What is the formula for finding mid in merge sort?
- m. What is max heap?
- n. What is asymptotic notation?
- o. What is min heap?

SECTION-B

Q2. Attempt any six questions.   **6x5=30**
- i. What is algorithm? Write the various rules to write an algorithm.
- ii. What is asymptotic Notation? Explain with types.
- iii. Discuss insertion sort algorithm with example.
- iv. Explain bubble sort algorithm with example.
- v. Differentiate between BFS and DFS.
- vi. Discuss job sequencing problem using greedy technique.
- vii. What is Amortized analysis?
- viii. Write down binary search algorithm with example.
- ix. Discuss analysis of algorithms along with types.

SECTION-C

Q3. Attempt any three questions.   **3x10=30**
- a. Implement selection sort on the following list: 12,8,66,30,15,24,6,10. Write steps of algorithm used.
- b. Discuss : Kruskal's algorithm and Prim's algorithm
- c. What is Greedy algorithm? Explain its characteristics, benefits and disadvantages.
- d. Write down Quick sort algorithm also explain it with the help of example.
- e. Define algorithm. What are its various characteristics?