

2022

Time : 3 hours

Full Marks : 60

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A
(Compulsory)

1. Write the answer of each of the following question : 1×10 = 10
 - (a) Define Algorithms.
 - (b) What do you mean by tree ?
 - (c) What is graph ?
 - (d) Define MST.
 - (e) What do you mean by Big O ?
 - (f) Define space Complexity.
 - (g) Define Master Theorem.

- (h) Define Bucket Sort.
- (i) What is worst case of selection Sort ?
- (j) Define regular graph.
2. What are the Properties of Algorithms ? 5

Group – B

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

15×3 = 45

3. What do you mean by sorting ? Explain Bubble sort.
4. Differentiate between BFS and DFS and justify Backtracking.
5. Create Heap and sort following data (Show tree every step) 17, 32, 45, 76, 40, 13, 55, 30, 7, 11.
6. What do you mean by Prim's Algorithms ? Differentiate between Prim's and Krushkal's Algorithms.
7. What are the characteristics of Dynamic Programming Algorithm ? Discuss 0/1 Knapsack problem with its complexity.

