

Total No. of Questions : 4]

SEAT No. :

PB24

[Total No. of Pages : 2

[6268]-218

S.E. (Computer Engineering) (Artificial Intelligence & Data Science Engineering) (Insem)

**DATA STRUCTURES AND ALGORITHMS
(2019 Pattern) (Semester - IV) (210252)**

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) *Answer Q.1 or Q.2, Q.3 or Q.4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data if necessary*

- Q1)** a) For the given set of values: 76,40,48,5,55 Construct a hash table with size 7 and resolve collision using quadratic probing. [6]
- b) Explain about skip list in Hashing. Give applications of skip list. [4]
- c) What is hash function? What are characteristics of good hash function?[5]

OR

- Q2)** a) Prepare hash table by Inserting following Elements into hash table using extendible hashing: 16, 4, 6, 22, 24, 10, 31, 7, 9, 20, 26. Bucket Size: 3 (Assume) [6]
- b) Explain applications of Hash Table. [4]
- c) What is hashing? Explain different methods of hash function calculation.[5]

- Q3)** a) Explain how to convert general tree to binary tree with example. [4]
- b) Write non recursive pseudocode for inorder traversal of Binary tree. [5]
- c) Describe binary search tree deletion with example. [6]

OR

P.T.O.

Q4) a) Write pseudocode for BFS traversal of binary search tree. [4]

b) Construct Huffman's tree and determine code for following characters whose frequencies are as given [5]

Character	A	B	C	D	E
Frequency	20	10	10	30	30

c) What is the necessity of Threaded binary tree? Explain advantages and disadvantages of TBT. [6]

