

### III- SEM CSE/IT/2019(W)/ (New)

#### Th. 2-DATA STRUCTURE

Full Marks: 80

Time: 3 Hours

Answer any Five Questions including Q No. 1 & 2

Figures in the right hand margin indicates marks

1.	Answer ALL the Questions: a) Define algorithm complexity. b) What is Stack? Write any two applications of stack. c) Define strictly binary tree with example. d) What is the output of the following instructions: <pre>char str1[] = "Hello"; char str2[] = "World"; strcpy(str2, str1); printf("%s", str1);</pre> e) What do you mean by Abstract Data Type? f) Explain an Adjacency Matrix with example. g) What do you mean by EOF in a file? h) List down the type of arithmetic expression with example. i) What is leaf node in Tree? j) What do you mean by recursion?	(2X10)
2.	Answer any SIX Questions: a) Define Queue. Explain the overflow and underflow condition of a queue. b) Describe all the tree traversal methods with examples. c) Define Linked list. Describe types of linked list. d) Define File. Explain different file organisations. e) Write the pop algorithm of stack? f) Explain the procedure of binary search? g) What is priority Queue? Write some applications of priority Queue.	(5X6)
3.	Explain Bubble sort with example.	10
4.	What is Hashing? Describe all the hashing functions with suitable examples. Write collision resolution techniques.	10
5.	Define Binary Search Tree. Explain with example.	10
6.	What do you mean by a single linked list? Describe the procedure of traversing all the items in a linked list.	10
7.	Define array. Describe row-major and column-major order of an array.	10