

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2018****Subject Code:130702****Date:28/11/2018****Subject Name:Data And File Structure****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) List and explain all primitive and non-primitive data types. **07**
(b) 1. Write the algorithm to Insert a value in Circular Queue. **03**
2. Evaluate the given post-fix expression using stack: **04**
 $9\ 1\ /\ 9\ 3\ /\ 9\ 1\ /\ +\ -$
Show stacks status at each step.
- Q.2** (a) Explain working of doubly ended queue with example. **07**
(b) Give the algorithm to convert infix expression to reverse polish expression. **07**
- OR**
- (b) 1. Draw binary tree for following pre-order and post-order traversals. **03**
In-order: CBAEFDG
Post-order: CBFEGDA
2. Convert the following expression to postfix expression. **04**
 $((7-2)*4+(6/2^1*9))$
- Q.3** (a) Show linked list representation of polynomial. **07**
(b) Write a C program that inserts DLL node into doubly linked list. **07**
- OR**
- Q.3** (a) Give an example of linked implementation of stack. **07**
(b) Write a short note on application of linked lists. **07**
- Q.4** (a) Explain threaded binary trees. **07**
(b) Show working of weight balanced trees with example. **07**
- OR**
- Q.4** (a) Define spanning trees and minimal spanning trees. Give any one example to find minimal spanning tree. **07**
(b) Explain 2-3 trees with example. **07**
- Q.5** (a) Explain all the collision resolution techniques. **07**
(b) Write a short note on indexed file organization. **07**
- OR**
- Q.5** (a) List all the hashing techniques and explain each one of them. **07**
(b) Write a short note on multi-key file organization. **07**
