# GANPAT UNIVERSITY

# B. Tech SEMESTER: III (CE / IT)

# 2CEIT304: Data Structures

**Assignment -1**

1. Differentiate between:
   1. Linear V/S non-linear data structures.
   2. LIFO V/S FIFO
2. Write an algorithm / program to check whether the given string is palindrome or not using stack. The entered string may have even or odd length.
3. Write the algorithm to convert parenthesized infix expression into postfix expression.
4. Convert the following infix expressions into postfix using stack simulation:
   1. **( A + B ) – ( (C \* D) / (E – F)) ^ G**
   2. **(((((A + B) – C) \* D) / E) – F ) – (G \* H)**
5. Evaluate the postfix expression using stack: **7 2 3 \* + 8 – 2 ^ 5 /**
6. How stack can be useful in recursions? Show the use of stack in solving any problem using recursion.
7. Explain overflow condition with respect to circular queue with example.
8. What is linked list? Explain how it overcomes the disadvantage of array.
9. Write a program to implement Priority queue using linked list
10. List the advantages and disadvantages of circular linked list. Write an algorithm to insert a new node after the specified node in circular linked list.

**Last date for submission: 30/09/2020**