ABES ENGINNERING COLLEGE, GHAZIABAD

DEPARTMENT OF CSE-DS

B.TECH SEM III DATA STRUCTURE(KCS 301)

QUESTION BANK: UNIT -2, TOPIC: STACK

Q1. Define Stack. Write the algorithm to implement PUSH and POP operation on stack.

Q2. Write a c program to implement stack using Linked List and perform PUSH and POP operation onto the stack.

Q3. Write an algorithm to convert infix expression to postfix expression.

Q4. Write an algorithm to evaluate an postfix expression using STACK.

Q5. Consider the following expression written in infix notation

(A + B) * C + D / (B + A * C) + D

Convert the above expression into postfix notation.

Q6. Consider the following expression written in infix notation

(A + B) * C + D / (B + A * C) + D

Convert the above expression into prefix notation.

Q7. Convert **abcde^^*+** postfix expression into infix using stack.

Q8. Consider the following arithmetic expression in postfix notation: **7 5 2 + * 4 1 5 - / -**

i) find the value of the postfix expression

ii) find the equivalent prefix of above expression.

Q9. Perform evaluation of postfix expression using stack: ABC+*DE/-, where A= 5, B=6, C=2, D=12, E=4.

Q10. Solve the following

a) ((A-(B+C)*D)/(E+F) [Infix to postfix]

b) (A+B)+*C-(D-E)^F [Infix to Prefix]

Q11. Show the detailed content of the stack for the given postfix expression to evaluate

6 2 3 + - 3 8 2 / + * 2 + 3 +

Q12. Define stack abstract data structure and discuss its application.

Q13. Write a C program to convert decimal to binary using Stack.

Q14. Write an algorithm to reverse the string using stack.

Q15. Convert the following infix expression into postfix and prefix using stack

a) (A+B)*C –(D-E)^(F+G)

b) A/ (B-C)*D+G

Q16.Write a C program to implement two stack in single array.