Data structures and Algorithms

Theory Assignment: 1

Assign Date: 4, Nov **Due Date:10, Nov**

1. Define Abstract Data Type? What is the difference between ADT and data structure?
2. What is an algorithm? What are the characteristics of algorithm? Explain.
3. What do you mean by complexity of Algorithm? Explain.
4. What is best case, average case and worst case? Which case is used more and why?
5. Compare Big Oh, Big Omega and Big theta notation.
6. Convert A+[(B+C)+(D+E)*F]/G and ((A*B)*C-(D-E))$(F+G) into Postfix using stack.
7. Convert (A-B/C)*(D*E-F) and A/B^C+D into Prefix using stack.
8. Write an algorithm to PUSH and POP elements in stack.
9. What do you mean by recursion? Explain the implementation of factorial and Fibonacci sequence with example.
10. Difference between Recursion and Iteration.