

BIRLA VISHVAKARMA MAHAVIDYALAYA
(An Autonomous Institute)
INFORMATION TECHNOLOGY DEPARTMENT
AY: 2016-17 BE-IVth SEM

Subject Code: IT206
Subject Name: Data Structure

Date: 06.02.2017

Assignment-1

- 1) Define Following Terms:
 - a) Data
 - b) Data type
 - c) Abstract Data type(ADT)
 - d) Data Structure
 - e) Algorithm
 - f) Time Complexity
 - g) Space Complexity
- 2) Explain types of Data Structure by stating their difference.
- 3) Explain properties of an algorithm.
- 4) Explain analysis of an algorithm with example.
- 5) Explain Searching techniques with example.
- 6) Explain Quick sort and merge sort with example.
- 7) Explain Stack and its operation with example. Which are the applications of Stack?
- 8) $(a + b \wedge c \wedge d) * (e + f / d)$ translate into polish notation and trace the content of stack.
- 9) $A - (B / C + (D \% E * F) / G) * H$ translate into reverse polish notation (RPN) and trace the content of stack.
- 10) $(A - B) / ((D + E) * F)$ translate into Polish and reverse polish notation.
- 11) Evaluate postfix notation: 7 5 2 + * 4 1 1 + / -
- 12) Evaluate prefix notation: * - A / B C - * D E F where A=2 B=1 C=4 D=3 E=5 F=1
- 13) $10 + 3 * 5 / (16 - 4)$ Convert into postfix notation.
- 14) What is recursion? Explain tower of Hanoi Problem.

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