Ruchi Verma

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April 2018

B.Tech/ 2nd Semester

COURSE CODE: 14B21CI211 MAX. MARKS:25

COURSE NAME: Basic Data Structures

COURSE CREDITS: 4 MAX. TIME: 1.5 Hr

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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1. Write the code for the following operations : (5.0)
   I. Inserting a node in the beginning and end of a doubly linked list
   II. Deletion of a node from the beginning and end of a singly linked list

2. What is a circular linked list? List the properties of circular linked list and write the code for creating a circular linked list. (5.0)

3. Write the code for push pop and peek operations in a stack. List the applications on stacks. Define the underflow and overflow condition of a stack. (5.0)

4. Answer the following: (5.0)
   I. What factors determine the choice of data structure for a program?
   II. How does dynamic memory allocation help in managing data?
   III. What is data abstraction?
   IV. What is the difference between a data type and data structure?
   V. How do you search for a target element in a linked list?

5. Convert the following expressions from Infix to postfix and prefix form (3.0)
   I. A/B^C+D*E-A*C
   II. (B^2 – 4 * A * C)^(1/2)

6. Write the algorithms for pre order, in order and post order traversals. (2.0)