ANURAG GROUP OF INSTITUTIONS

Autonomous
School of Engineering
I – B. Tech – II – Semester – II - Assignment Examination
Subject: Programming For Problem Solving-II
(Common toALL)

Time: 50Mins   Max.Marks:05

Answer all the questions:

1. Compare and Contrast between
   a. Static and Dynamic memory allocation with an example.
   b. Linked list and Array data structures.
   c. Stacks and Queue.
2. Explain Data Structure. Sketch out various types of data structures.
3. Design a program for creation of
   a. Single Linked List.
   b. Stack Operations.
   c. Queue Operations.
4. Construct a C Program to create a single linked list for the following data:
   47, 54, 67, 4, 25 and perform the following operations:
   a. Insert node 10 before 47 and display.
   b. Delete a node which consists an element 10 and display.
   c. Search a node of element 67 and display.
   d. Search a node of element 23 and display.
5. The initial content of stack is 20, 30, 40, and 50 the top of the stack is pointing to 50. Perform the following operations and assess the status of the stack with neat diagram?
   1) push(20) 2) push(28) 3) pop(20) 4)display( ) 5) pop( ) 6) pop( ).
6. The initial content of queue is 20, 30, 40, and 50, perform the following operations and assess the status of the stack with neat diagram?
      1) Current elements value at front and rear 2) insert 30 3) insert 35 4) delete 30
      5) Display 6) current elements and rear and front points.
7. Outline various random access of file methods with an example.
8. Consider the following operations performed on a stack of size 5 :
   Push(a); Pop() ; Push(b); Push(c); Pop();
   Push(d); Pop();Pop(); Push (e)
   Whether the stack operations performed smoothly?
9. The five items: A, B, C, D, and E are pushed in a stack, one after other starting from A. The stack is popped four items and each element is inserted in a queue. The two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack. The popped item is.
10. The seven elements A, B, C, D, E, F and G are pushed onto a stack in reverse order, i.e., starting from G. The stack is popped five times and each element is inserted into a

queue. Two elements are deleted from the queue and pushed back onto the stack. Now, one element is popped from the stack. The popped item is _____.

11 a. How many stacks are needed to implement a queue? Consider the situation where no other data structure like arrays, linked list is available to you.

b. How many queues are needed to implement a stack? Consider the situation where no other data structure like arrays, linked list is available to you.

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