

VINAYAKA MISSIONS SIKKIM UNIVERSITY

(Estd. by Sikkim Legislative Act vide VMSUAct No. 11 of 2008)

DIRECTORATE OF DISTANCE EDUCATION

NH 10-A, Tadong, East Sikkim-737102

Programme: Master of Computer Application

Session: 2015-16

Full Marks: 10

Course/Subject Name: Data Structures and Algorithm Using C, C++

Course/Subject Code: CS 4205

Assignment No: 1

Last Date of Submission: 31st March 2016

SECTION –A

Answer the following questions.

[0.5x10=5]

1. The process of extracting the relevant attribute of an object is known as:
a) Data hiding b) Encapsulation c) Abstraction d) inheritance
2. Pointer is used in:
a) Immediate addressing b) Direct addressing c) Index addressing d) none
3. _____ supports reusability.
a) Modularity b) Abstraction c) Data hiding d) Inheritance
4. Which is the mandatory part to be present in function pointer?
a) & b) return value c) data types d) none
5. Which of the following operator is used to release the dynamically allocated memory?
a) delete b) free c) remove d) drop
6. The fields in the class are by default:
a) Public b) protected c) private d) none
7. In CPP, dynamic memory allocation is done using _____ operator.
a) calloc () b) new c) malloc () d) allocate

SECTION –B

Answer any Five questions from the following within 50 words

[1x5=5]

1. Define data structure.
 2. Define algorithm.
 3. Mention important attributes in analyzing algorithms.
 4. Mention basic operations performed on stacks.
 5. What is the importance of header node in linked list?
 6. What is the time complexity of linear search?
 7. What is a hash function
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Course/Subject Name: Data Structures and Algorithm Using C, C++

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Assignment No: 2

Last Date of Submission: 15th April 2016

SECTION –A

Answer the following questions.

[0.5x10=5]

1. A linear search is more efficient than a binary search. (True / False)
2. For a binary search, the array should be already sorted. (True / False)
3. Which of these is an internal sorting technique?
(a) Heap sort (b) Quick sort (c) Merge sort (d) All of these
4. The situation when in a linked list START=NULL is
(a) Underflow (b) overflow (c) housefull (d) saturated
5. The term "push" and "pop" is related to the
(a) array (b) lists (c) stacks (d) all of above
6. A queue can be represented as an array as well as a linked list. (True / False)
7. A new node can be inserted only in the beginning or at the end of a linked list. (True / False)
8. A doubly linked list facilitates movement from one node to another in either direction. (True / False)
9. A queue implemented as a linked list is known as a
(a) linked queue (b) linked list (c) linked stack (d) none of the above
10. The process of collecting unused space and returning it to the free-storage list is called
(a) queue (b) linked list (c) garbage collection (d) none of the above

SECTION –B

Answer any Five questions from the following within 50 words

[1x5=5]

1. Define a data structure.
 2. Give a real-life example of a stack.
 3. What are the applications of stacks?
 4. What are the advantages of a linked list over an array?
 5. What happens when a new element is inserted in a queue?
 6. Define extended binary tree.
 7. What are the various steps of in-order traversal?
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Programme: Master of Computer Application

Session: 2015-16

Full Marks: 5

Course/Subject Name: Data Structures and Algorithm Using C, C++

Course/Subject Code: CS 4205

Assignment No:2

Last Date of Submission:15th April 2016

SECTION –A

Answer the following questions.

[0.5x10=5]

- Which of the following is not a linear data structure?
(a) Stack (b) Queue (c) Tree (d) Linked List
- A queue is also called a First-In-First-Out (FIFO) list. (True / False)
- A node without any child node is called:
(a) Internal node (b) Leaf Node (c) Root node (d) none of the above
- Removing an element from the stack is known as _____ operation.
(a) Push (b) pull (c) pop-up (d) pop
- The condition $Top = -1$ indicates that:
(a) Stack is empty (b) Stack is full (c) Stack has only one element (d) None of the above
- A queue is a :
(a) Linear data structure (b) non- linear data structure
(c) Both (a) and (b) (d) None of the above
- When a new node is inserted in between a linked list, which of these is true?
(a) Only the nodes that appear after the new node need to be moved.
(b) Only the nodes that appear before the new node need to be moved.
(c) The nodes that appear before and after the new node need to be moved.
(d) None of the above.
- The address of which of these nodes does the next pointer of the last node of a circular linked list contain?
(a) First node (b) Second node (c) The node before the last node (d) Cannot be determined
- The trees representing disjoint sets cannot be stored in a single array. (True / False ?)
- Which of these searching techniques is suitable for unsorted arrays?
(a) Binary search (b) Linear search (c) None of these (d) Any of these

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