G H Raisoni College of Engineering and Management, Pune. (An Autonomous Institution) SY (Computer Engineering) (Term-III) TAE1 Quiz Data Structure and Algorithms (UCSL201)

Data Structures and Algorithms
TAE 1 [5 Marks]   (*20 Marks scale down to 5 marks)

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17. Five people P,Q,R,S and T are standing in a queue. R is standing between   1 point
P and T. P is just behind Q and Q is second in the queue. Who is second last
in the queue?

○ T

○ S

◉ R

○ P

Clear selection

8. . _____ is the maximum number of steps that can executed for the   1 point
given parameters

○ Average case

◉ Worst case

○ Time complexity

○ Best case

Clear selection

18. A linear list in which each node has pointers to point to the predecessor   1 point
and successors nodes is called as

○ Singly Linked List

○ Circular Linked List

◉ Doubly Linked List

○ Linear Linked List

Clear selection

Name *

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SCOB86

19. Consider an implementation of unsorted singly linked list. Suppose it   1 point
has its representation with a head pointer only. Given the representation,
which of the following operation can be implemented in O(1) time? i)
Insertion at the front of the linked list ii) Insertion at the end of the linked
list iii) Deletion of the front node of the linked list iv) Deletion of the last
node of the linked list

○ I and II

◉ I and III

○ I, II and III

○ I, II and IV

Clear selection

14. The worst-case occur in linear search algorithm when …….   1 point

◉ Item is the last element in the array or item is not there at all

○ Item is not in the array at all

○ Item is the last element in the array

○ Item is somewhere in the middle of the array

Clear selection

2. How do you initialize an array in C?   1 point

○ int arr[3] = (1,2,3);

○ int arr(3) = {1,2,3};

◉ int arr[3] = {1,2,3};

○ int arr(3) = (1,2,3);

Clear selection

5. push() and pop() functions are found in   1 point

○ queue

○ linked list

○ trees

◉ stack

Clear selection

4. Stack in data structure is   1 point

○ FIFO

◉ LIFO

○ LILO

○ None of these

Clear selection

10. Which of the following sorting algorithm is of divide and conquer type?   1 point

○ Bubble sort

◉ Merge sort

○ Selection sort

○ Radix sort

Clear selection

3. In the stack, if users try to remove element from the empty stack then it is called as   1 point

○ Empty collection

◉ Underflow of stack

○ Garbage collection

○ Overflow of stack

Clear selection

7. Linked list is considered as an example of _____ type of memory allocation.   1 point

○ Heap

○ Static

○ Compile

◉ Dynamic

Clear selection

1 point

Consider the following definition in c programming language

struct node {

int data;

struct node * next; }
typedef struct node NODE;

NODE *ptr;

Which of the following c code is used to create new node?

⦿ ptr = (NODE*)malloc(sizeof(NODE));

◯ ptr = (NODE*)malloc(NODE);

◯ ptr = (NODE*)malloc(sizeof(NODE*));

◯ ptr = (NODE)malloc(sizeof(NODE));

Clear selection

15. In a circular linked list   1 point

◯ Components are all linked together in some sequential manner

⦿ There is no beginning and no end.

◯ Components are arranged hierarchically.

◯ Forward and backward traversal within the list is permitted.

Clear selection

12. .... sorting algorithm is frequently used when n is small where n is total   1 point
number of elements.

◯ Heap

◯ Bubble

⦿ Insertion

◯ Quick

Clear selection

16. Which of the following is not a limitation of binary search algorithm?   1 point

◯ must use a sorted array

◯ requirement of sorted array is expensive when a lot of insertion and deletions are
needed

⦿ binary search algorithm is not efficient when the data elements more than 1500.

◯ there must be a mechanism to access middle element directly

Clear selection

13. Which of this is not an application of linklist   1 point

◯ To implement file system

◯ for separate chaining in hash tables

◯ to implement non binary trees

⦿ random access of elements

Clear selection

9. An algorithm that calls itself directly or indirectly is known as   1 point

○ Sub algorithm

◉ Recursion

○ Polish notation

○ Traversal algorithm

Clear selection

In the worst case, the number of comparisons needed to search a singly   1 point
linked list of length n for a given element is

○ log 2 n

○ n/2

○ log 2 n − 1

◉ n

Clear selection

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20. Match the following. a) Completeness i) How long does it take to find a   1 point
solution, b) Time Complexity ii) How much memory need to perform the
search., c) Space Complexity iii) Is the strategy guaranteed to find the
solution when there in one.

○ a-iii, b-ii, c-i

○ a-i, b-ii, c-iii

◉ a-iii, b-i, c-ii

○ a-i, b-iii, c-ii

Clear selection

6. A linear collection of data elements where the linear node is given by means of pointer is called?

1 point

◉ Linked list

◯ Node list

◯ Primitive list

◯ Unordered list

Clear selection

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