

# 13.01.21/A/ R 19/Sem 3/CSC303/Data Structures/ MCQ

## Instructions

R2019 /CBCGS/SE/ CE / Sem 3 / CSC303/ Data Structures- University of Mumbai Online Examination SH 2020

Please note before you attempt examination:

1. This is 80 marks (40 marks MCQs and 40 marks descriptive) examination for 2 hours duration. 40 minutes for solving MCQ questions and remaining 80 minutes for descriptive questions. The link will get automatically disabled after 2 hours.
2. After submitting MCQs within 40 minutes, you have to click on to the link given in response message to enter into descriptive question section.
3. The link of descriptive question will be enabled only after 40 minutes from start of the test. You will be getting 80 minutes to solve this section.
4. You have to fill the mandatory information first before attempting the quiz.
5. In MCQ section, the total marks are assigned is 40 for 20 MCQs which are compulsory and each question carry 2 marks (total 40 marks).
6. For descriptive question (Q.2 and Q.3), total marks assigned are 40 (20 marks each), you need to write the answers in legible handwriting on A4 paper. After completion of all the answers, you need to write the semester and subject name along with your correct seat number, duly signed by you and page number in typical format (current page number/ total pages) e.g. 1/5 or 3/7 (1 and 3 indicates current page number and 5 and 7 indicates total number of pages respectively on which answers are written) on each and every page.
7. Use scanning app to scan the question wise answers in PDF and upload the same using the specific link provided in the MS forms.
8. Use only college gst.sies.edu.in Email ID to appear for examination.
9. Keep your Hall Ticket and/or college ID with you while appearing for this examination.

...

Hi SHINIT, when you submit this form, the owner will be able to see your name and email address.

**\* Required**

1. University seat No. \*

42213077

2. Re-enter seat No. \*

42213077

3. Name of the candidate as per hall ticket \*

SHETTY SHINIT DINESH

4. Name of the examination \*

SE CE sem III (R19) SH 2020

5. Name of the course/ subject with course code \*

Data Structures/ CSC303

6. What will the output of the following function if nodes present in linked list are 6->5->2->8->9->NULL and START points the first node.

```
void fun (struct node* START)
{
    if (START == NULL)
```

```
    return;  
    fun(START->next);  
    printf("%d ", START->data);  
} *
```

(2 Points)

- ☐ 9,8,2,6,5
- ☐ 9,6,5,2,8
- ☐ 6,5,2,8,9
- ☒ 9,8,2,5,6

7. What are the values of  $h_1(k)$  and  $h_2(k)$  in the double hashing? \*

(2 Points)

- ☐  $h_1(k) = (k \bmod m)$  and  $h_2(k) = k \bmod m'$
- ☒  $h_1(k) = (k \bmod m)$  and  $h_2(k) = 1 + (k \bmod m')$
- ☐  $h_1(k) = (m \bmod k)$  and  $h_2(k) = 1 + (m' \bmod k)$
- ☐  $h_1(k) = (1 + (m \bmod k))$  and  $h_2(k) = m' \bmod k$

8. What is the number of edges present in a complete graph having  $n$  vertices? \*

(2 Points)

- ☐  $n$
- ☒  $(n*(n-1))/2$
- ☐  $(n-1)/2$
- ☐  $(n*(n+1))/2$

9. What is the output of following function if start pointing to first node of following linked list?

12->3->4->5->6->NULL

```
void fun (struct node* start)
{
    if (start == NULL)
        return;
    printf("%d ", start->data);

    if (start->next != NULL)
        fun(start->next);
    printf("%d ", start->data);
} *
```

(2 Points)

- ☐ 1,2,3,4,5,6,6,5,4,3,2,1
- ☐ 1,3,5,2,4,6,1,3,5,2,4,6
- ☒ 1,3,5,5,3,1,1,3,5,5,3,1
- ☐ 6,5,4,3,2,1,6,5,4,3,2,1

10. struct node \*ptr = start->next;

what "ptr" will contain if it is variable of type struct node? (start points to first node) \*

(2 Points)

- ☐ Address field of second node
- ☐ Data of second node
- ☒ Address of second node
- ☐ Data fields of second field

11. Using division method, in a given hash table of size 153, the key of value 172 be placed at position. \*

(2 Points)

- ☐ 15
- ☐ 17
- ☐ 72
- ☒ 19

12. Consider the following code segment in C to traverse a binary tree using the preorder

```
void preorder (node *tree)
{
if (t)
{
Statement1
Statement2
Statement3
}
}
```

The above Statements should be, \*

(2 Points)

- ☐ preorder(tree->left); preorder(tree->right); printf("%d", tree->info);
- ☒ printf("%d", tree->info); preorder(tree->left); preorder(tree->right);
- ☐ preorder(tree->left); printf("%d", tree->info); preorder(tree->right);
- ☐ printf("%d", tree->info);preorder(tree->right); preorder(tree->left);

13. A circular queue is implemented using an array of size 15. The array index starts with 0, front is 10, and rear is 14. The insertion of next element takes place at which array index? \*

(2 Points)

(2 Points)

- ☐ 11
- ☐ 15
- ☐ 1
- ☒ 0

14. The result of evaluating the postfix expression  $59+84-*8/$  \*

(2 Points)

- ☐ 4
- ☐ 6
- ☒ 7
- ☐ 5

15. Which data structure is also known as a head tail linked list because elements can be added to or removed from the front (head) or back (tail)? However, no element can be added or deleted from the middle. \*

(2 Points)

- ☐ Stack
- ☐ Priority queue
- ☐ Circular queue
- ☒ Deque

16. Which data structure has fixed size? \*

(2 Points)

 Answer

☒ Array☐ Tree☐ Linked List☐ Graph

17. A BST is traversed in the following order recursively: Right, root, left  
The output sequence will be in, \*

(2 Points)

☐ No specific sequence☐ Ascending order☒ Descending order☐ Random sequence

18. Which type of linked list has no beginning and no ending. \*

(2 Points)

☐ Multi Linked List☐ Doubly Linked List☒ Circular Linked List☐ Singly Linked List

19. What are the number of nodes in left and right sub-tree of the root node if the data is inserted in the following order in binary search tree 45, 15, 8, 56, 64, 65, 47, 12, 59, 10, 73, 50, 16, 61? \*

(2 Points)

☐ 8,5

☒ 5,8☐ 6,7☐ 7,6

20. What will be the output of the following program?

```
void main ()
{
char str [] ="STRUCTURE";
int len = strlen(str);
int i;

for (i=0; i<len; i++)
push(str[i]); // pushes an element into stack

for (i=0; i<len; i++
pop (); //pops an element from the stack
} *
```

(2 Points)

☐ STRUCTURE☐ EUCRSTUTR☐ CTURESTRU☒ ERUTCURTS

21. What is the maximum possible number of edges in a directed graph with no self-loops having 7 vertices? \*

(2 Points)

☐ 56☐ 35☐ 28



☒ 42

22. When in-order and post-order traversing a tree resulted D, B, E, A, C, G, F and D, E, B, G, F, C, A respectively. the pre-order traversal would return: \*  
(2 Points)

☐ A, D, E, B, C, F, G

☐ A, B, C, F, G, D, E

☒ A, B, D, E, C, F, G

☐ A, B, G, F, D, E, C

23. What is the maximum possible number of nodes in a binary tree at level 6?  
\*

(2 Points)

☐ 80

☐ 32

☐ 48

☒ 64

24. In a doubly linked list, the number of pointers affected for an insertion operation in middle will be\_\_\_\_\_. \*  
(2 Points)

☒ 4

☐ 2

☐ 1

☐ 0

25. Assume that a structure for a Binary Search Tree exists. What does the following function do?

```
int function(root)
{
    ptr = root;
    while (ptr->left!= NULL)
    {
        ptr = ptr->left;
    }
    return(ptr->data);
} *
```

(2 Points)

- ☒ Leftmost child of BST
- ☐ Rightmost child of BST
- ☐ It gives error
- ☐ Root of BST

Submit

This content is created by the owner of the form. The data you submit will be sent to the form owner. Microsoft is not responsible for the privacy or security practices of its customers, including those of this form owner. Never give out your password.

Powered by Microsoft Forms | [Privacy and cookies](#) | [Terms of use](#)