St. Mary's Group of Institutions Hyderabad

MID –I Exam Important Questions

1. Which of the following is not a disadvantage to the usage of array?
    a. Fixed size
    b. There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size
    c. Insertion based on position
    d. Accessing elements at specified positions
2. Which of these is not an application of linked list?
    a. To implement file systems
    b. For separate chaining in hash-tables
    c. To implement non-binary trees
    d. Random Access of elements
3. Which of the following is false about a doubly linked list?
    a. We can navigate in both the directions
    b. It requires more space than a singly linked list
    c. Implementing a doubly linked list is easier than singly linked list
    d. The insertion and deletion of a node take a bit longer
4. How to know a node is last node in circular linked list?
    a. A node 'next' pointer value is null
    b. A node 'next pointer value is head
    c. A node 'next; pointer value previous node
    d. None of the above
5. Which of the following application makes use of a circular linked list?
    a. Undo operation in a text editor
    b. Recursive function calls
    c. Allocating CPU to resources
    d. Implement Hash Tables
    e. erviced at a counter
6. What does 'stack underflow' refer to?
    a. accessing item from an undefined stack
    b. adding items to a full stack
    c. removing items from an empty stack
    d. None of the above
7. Consider these functions:
   push() : push an element into the stack
   pop() : pop the top-of-the-stack element
   top() : returns the item stored in top-of-the-stack-node
   What will be the output after performing these sequence of operations?
   push(20);push(30);top();pop();pop();push(40);top();
    a. 20

b. 30
c. Stack Underflow
d. 40

8. What should be the value of rear if Queue is full
a. 0
b. SIZE
c. SIZE+1
d. SIZE-1

9. In linked list implementation of a queue, where does a new element be inserted?
a. At the head of link list
b. At the center position in the link list
c. At the tail of the link list
d. At any position in the linked list

10. Which data structure is used to convert infix to postfix expression?
a. Queue
b. Stack
c. Linked List
d. Circular Queue

11. If several elements are competing for the same bucket in the hash table, what is it called?
a. Replication
b. Collision
c. Duplication
d. Diffusion

12. What is direct addressing?
a. Distinct array position for every possible key
b. Fewer array positions than keys
c. Fewer keys than array positions
d. same array position for all keys

13. What is the search complexity in direct addressing?
a. O(1)
b. O(n)
c. O(logn)
d. O(nlogn)

14. What is a hash function?
a. A function has allocated memory to keys
b. A function that computes the location of the key in the array
c. A function that creates an array
d. A function that computes the location of the values in the array

15. Which of the following is not a technique to avoid a collision?
a. Make the hash function appear random
b. Use the chaining method
c. Use uniform hashing

d. Increasing hash table size

16. Which of the following is not a collision resolution technique?

a. Separate chaining
b. Linear Probbing
c. Quadratic probing
d. Hashing

17. In a hash table of size 7, where is element 8 placed?

a. 0
b. 7
c. 1
d. 2
e.

18. What is the advantage of a hash table as a data structure?

a. faster access of data
b. easy to implement
c. very efficient for less number of entries
d. exhibit good locality of reference

19. Collision is caused due to the presence of two keys having the same value.

a. True
b. False

20. Which of these about a dictionary is false?

a. The values of a dictionary can be accessed using keys
b. The keys of a dictionary can be accessed using values
c. Dictionaries aren't ordered
d. Dictionaries are mutable

21. Which of the following is false about a binary search tree?

a. The left child is always lesser than its parent
b. The right child is always greater than its parent
c. he left and right sub-trees should also be binary search trees
d. In order sequence gives decreasing order of elements

22. What does the following piece of code do?

```
void fuct(node *tree){
if(tree!=NULL)
{
printf("%d\t",tree->info);
pretrav(tree->left);
pretrav(tree->right);
}
```

a. Preorder Traversal
b. Inorder Traversal
c. Postorder Traversal
d. Levelorder Traversal

23. What will be the height of a balanced full binary tree with 8 leaves?

a. 8

b. 4
c. 6
d. 5

24. Which of the following tree data structures is not a balanced binary tree?
    a. AVL tree
    b. Red-black tree
    c. B-Tree
    d. Splay tree
25. Balanced binary tree with n items allows the lookup of an item in ____ worst-case time.
    a. O(logn)
    b. O(nlogn)
    c. O(1)
    d. O(n)