1. **Find the output-**

```
char c[] = "Myaodg2388";
ptr *a = c;
printf("%s", a+a[5]-a[2]);
```

a) dg2388   b) 2388   c) g2388   d) 388

Correct option - b) 2388

2. **Find the output of the following.**

```
#include<stdio.h>
void poin(int *q) {
      *q = 10;
}
int main() {
      int qw = 102;
      poin(&qw);
      printf("%d", qw);
}
```

a) 10   b) runtime error   c) syntax error   d) 102

Correct option - a) 10

3. **Find the output of the following code.**

```
#include<stdio.h>
struct st{
      int x;
      float q;
      char s;
      static int y;
};
int main() {
      printf("%d", sizeof(struct st));
      return 0;
}
```

a) 18   b) 14   c) compile error   d) 16

Correct option - c) compile error

4. **Choose the output of the following java program.**

```
class Main {
      public static void main(String args[]){
            System.out.println(getValue(getValue(0)));
      }
      static int getValue() {
            return 35;
      }
      private static int getValue(int num) {
```

```
            return 30+num;
       }
    }
```

a) 35   b) 60   c) compile error   d) 65

Correct option - b) 60

5. Why do you need to use equals() instead of == operator wen comparing string objects?

a) We cannot use equals() method, == operator is the correct way to go. Similar to what we see in python or javaScript.
b) We can use either. Java is smart enough to understand both of them.
c) We use the equals method because it compares the values of the string objects, while == operator compares the references.
d) Equals method compares the value of string objects, as well as the == operator is also the same. Programmers find it easy to get value from this small change.

Correct option - c) We use the equals method because it compares the values of the string objects, while == operator compares the references.

6. Consider the following program-

```
float f = 1.4;
if (f == 1.4) {
     printf("True");
}
else if {
     printf("False");
}
else {
     printf("f");
}
```

If we use double instead of float what will be the output?

a) True   b) False   c) error   d) 1.4

Correct option - a) True

7. The number of nodes of complete binary tree if there are 'n' levels is

a) 2^n b) $2^{(n-1)}$ c) $<=2^{(n-1)}$ d) $2^{(n)}-1$

Correct option - d) $2^{(n)}-1$

8. What is the output of the following code?

```
int arr[5];
for (int i=1; i<=5; i++) {
     arr[i] = i;
}
printf("%d", arr[0]);
```

a) 3   b) 4   c) 5   d) garbage value

Correct option - d) garbage value

9. **What is the output of the following code.**

```
int main() {
    int chr = 97;
    unsigned char i = chr;
    printf("unsigned char: %c\n", i);
    return 0;
}
```

a) a   b) b   c) 97   d) garbage value

Correct option - a) a

10. **The function of #ifndef (if not defined) is -**

    a) To prevent compilation of program in which function is not defined.
    b) To prevent header file from being included more than once.
    c) To optimize the code.
    d) None of the above

Correct option - b) to prevent header file from being included more than once.

11. **What is the output of the following code.**

```
#include<stdio.h>
int main() {
    char *str[] = {"Look", "forward", "but", "never", "wait", "guys!"};
    printf("%d %d", sizeof(str), sizeof(str[0]));
    return 0;
}
```

a) 48 8   b) 34 5   c) 6 1   d) error

Correct option - a) 48 8

12. **argv refers to -**

    a) Array of arguments
    b) Pointer to array of arguments
    c) Array of character pointers
    d) None of the above

Correct option - c) array of character pointers

13. **Word boundary of memory causes -**

    a) Memory overflow
    b) Contiguous memory allocation
    c) Slack byte
    d) Buffer overflow

Correct option - c) slack byte

14. **Code to insert a new node in front of a new list is -**

```
a) void insert (int data) {
       Node temp = new Node(data);
       if (head == null){
           head = temp;
           head.setNext(head.getNext());
       }
       else{
           temp.setNext(head.getNext());
           head = temp;
       }
       size ++;
   }


b) void insert (int data) {
       Node temp = new Node(data);
       while(cur != head)
           cur = cur.getNext();
       if (head == null){
           head = temp;
           head.setNext(head);
       }
       else{
           temp.setNext(head.getNext());
           cur.setNext(temp);
       }
       size ++;
   }


c) void insert (int data) {
       Node temp = new Node(data);
       if (head == null){
           head = temp;
           head.setNext(head);
       }
       else{
           temp.setNext(head);
           head = temp;
       }
       size ++;
   }


d) void insert (int data) {
       Node temp = new Node(data);
       Node cur = head;
       while (cur.getNext() != head)
           cur = cur.getNext();
       if (head == null){
           head = temp;
           head.setNext(head);
       }
       else{
           temp.setNext(head);
           head = temp;
           cur.setNext(temp);
       }
       size ++;
   }
```

Correct option - d) void insert (int data) {

                        Node temp = new Node(data);

```
                    Node cur = head;
                    while (cur.getNext() != head)
                        cur = cur.getNext();
                    if (head == null){
                        head = temp;
                        head.setNext(head);
                    }
                    else{
                        temp.setNext(head);
                        head = temp;
                        cur.setNext(temp);
                    }
                    size ++;
        }
```

15. Disadvantage of using trees are -

a) speed search   b) used in router   c) undo/redo in notepad   d) hierarchical structure

Correct option - c) undo/redo in notepad

16. A hacker wants to hack accounts of people stored in a contiguous chain. The digital wallet knows if its neighbour wallet is being hacked and it forbids any access. The hacker knows the balance stored in each account. He can maximize his loot through -

a) brute force method
b) recursion
c) divide and conquer
d) dynamic programming

Correct option - d) dynamic programming

17. For n number of leaders who together should decide whether they should attack or retreat from the enemy fort must reach consensus or they will be destroyed by the enemy. There are also some traitors as leaders who wants to make sure that no consensus is reached. Each leader can communicate every another one. Then the maximum number of traitors such they always reach consensus despite whatever the traitors say (whether attack or retreat) is -

a) 0.33n   b) 0.49n   c) 0.25n   d) data insufficient

Correct option - a) 0.33n

18. Discrete logarithm can be computed in polynomial time by -

a) Iterative algorithm
b) Divide and conquer algorithm
c) Dynamic approach
d) None of the above

Correct option - d) none of the above

19. Which data structure is used for BFS of graph to hold nodes.

a) Tree   b) array   c) stack   d) queue

Correct option - d) queue

20. Which of the following statement is false.

    a) Array are dense lists and static data structures.
    b) Data element in linked list need not be stored in adjacent space in memory.
    c) Pointers store the next data element of a list.
    d) Linked list are collection of the nodes that contain information part and next pointer.

Correct option - c) Pointer store the next data element of a list.

21. In a priority queue, insertion and deletion takes place at

    a) Front and rear end
    b) Only at front end
    c) Only at rear end
    d) Any position

Correct option - d) any position

22. Finite state machine is _____ tuple machine.

    a) 4   b) 5   c) 6   d) unlimited

Correct option - b) 5

23. Number of states require to accept strings ends with 101.

    a) 3   b) 4   c) 2   d) can't be represented

Correct option - b) 4

24. Regular expression of all strings starts with ab and ends with ba is -

    a) aba*b*ba   b) ab(ab)*ba   c) ab(a+b)*ba   d) All of the mentioned

Correct option - c) ab(a+b)*ba

25. In reverse polish notation, expression A*B+C*D is written as

    a) A*BCD*   b) AB*CD+*   c) AB*CD*   d) A*B*CD+

Correct option - c) AB*CD*

26. SIMD represents an organization that _____

    a) Refers to a computer system capable of processing several programs at the same time.
    b) Represents organization of single computer containing a control unit, processor unit and a memory unit.
    c) Includes many processing units under the supervision of a common control unit.
    d) None of the above.

Correct option - c) includes many processing units under the supervision of a common control unit.

27. Suppose that a bus has 16 data lines and requires 4 cycles of 250ns each to transfer data. The bandwidth of this bus would be 2Mbps. If the cycle time of the bus was reduced to 125ns, and the number of cycles required for transfer stayed the same what would be the bandwidth of the bus?

    a) 1Mbps   b) 4Mbps   c) 8Mbps   d) 2Mbps

Correct option - d) 2Mbps

28. Virtual memory consists of

    a) static RAM   b) dynamic RAM   c) magnetic memory   d) none of these

Correct option - a) static RAM

29. Which of the following system software resides in main memory always?

    a) loader   b) linker   c) text editor   d) assembler

Correct option - a) loader

30. In a two pass assembler the object code generation is done during the

    a) first pass   b) zeroth pass   c) second pass   d) none of the above

Correct option - c) second pass