1. What is Disk Defragmentor?
3. Expand the following abbreviations:
   a. RISC
   b. ASCII
4. How many bytes does a Petabyte has?
5. What is an Operating System? Explain any one mobile OS.
6. What is a microprocessor? Classify them according to the word length.
7. Enlist any four characteristics of a good program.
8. What is debugging?
9. What is modular programming?
10. Write an equivalent C++ expression for the following mathematical expression:
    a. $$\frac { 2x^2y-9y } { 2y^3 } - \frac { 4xy } { 2y^2 }$$
    b. $$|a| + b > |b| + a$$
11. Which C++ header file(s) will be essentially required to be included to run / execute the following C++ code:
    ```cpp
    void main()
    {
        char Msg[] = "Sunset Gardens";
        for (int i=5; i<strlen(Msg); i++)
            puts(Msg);
    }
    ```
12. Evaluate the following C++ expressions:
    ```cpp
    int a=5, b=3, c;
    float f, d = 1.5;
    a. f = ++b * b - a
    b. c = a-b++ * -d
    ```
13. Give an example of the following:
   a. Database Management System
   b. Spreadsheet package
   c. System Software
   d. First generation Computer
14. What is an error? Which type of error is hardest to locate and why?
15. What are comments? What are the two ways of specifying comments in C++?
16. What is the purpose of documentation? What are its types?
17. What is the difference between Syntax and Semantic errors? Give an example.
18. Differentiate between implicit and explicit type conversion. Also give a suitable C++ code to illustrate the same.
19. Convert:
   a. (BE1)₁₆ \rightarrow ( ? )₂
   b. (135)₈ \rightarrow ( ? )₁₀
   c. (101.0110)₂ \rightarrow ( ? )₁₀
   d. (288)₁₀ \rightarrow ( ? )₁₆
20. Give the output of the following code fragments:
   a. int x=10, y=5, z=11;
      ans = (x >= y) || ((z >=y) && (z<x))
      cout<<ans;
   b. char ch = 'a';
      ch = (ch == 'b')? 'b';
      cout<<ch;
21. Construct C++ expressions for the following:
   a. **Average** should be less than equal to 60 OR **Grade is A**
   b. Increase the value of the variable **count** by one.
22. What is meant by token? Name the tokens available in C++.
23. Rewrite the following program after removing the syntactical errors (if any). Underline each correction.

```cpp
#include <iostream.h>
struct Pixels
{
  int Color, Style;
}
void ShowPoint(Pixels P)
{
  cout<<P.Color,P.Style<<endl;}
void main()
{
  Pixels Point1=(5,3);
  ShowPoint(Point1);
  Pixels Point2=Point1;
  Color.Point1++;
  ShowPoint(Point2);
}```
24. What is #define? Explain with a suitable example.
25. Study the following program and select the possible output from it:

```c
#include<iostream.h>
#include<stdlib.h>
const int Max=3;
void main() {
    randomize();
    int Number;
    Number=50+random(Max);
    for(int P=Number; P>=50; P--) {
        cout<<P<<"#">
        cout<<endl;
    }
}
```

(i) 53#52#51#50#
(ii) 50#51#52#
(iii) 50#51#
(iv) 51#50#

26. Write a for loop that prints the following pattern on the screen

```
  *****
  **** *
  *** *
  ** *
  *
```

27. Differentiate between strcmp() and strcmpi() functions, giving suitable examples of each.
29. Find the output of the following:

```c
#include<iostream.h>
#include<stdio.h>
#include<string.h>
#include<ctype.h>
void main() {
    char Name[ ] = "IntRanET";
    for(int x=0; x<strlen(Name); x++) {
        if(islower(Name[x]))
        Name[x]=toupper(Name[x]);
        else if(isupper(Name[x]))
            if(x%2 == 0)
                Name[x]=tolower(Name[x]);
            else
                Name[x]=Name[x-1];
    }
    puts(Name);
}
```
30. Give the output:
```cpp
#include <iostream.h>
int &maximum(int &x, int &y)
{
    if (x>y)
        return (x);
    else
        return (y);
}
void main()
{
    int A=10, B=13;
    maximum(A, B) = -1;
    cout<<"A="<<A<<"B="<<B<<endl;
    maximum(B, A) = 7;
    cout<<"A="<<A<<"B="<<B<<endl;
    maximum(A, B) = 3;
    cout<<"A="<<A<<"B="<<B<<endl;
}
```

31. Give the output of the following program.
```cpp
#include <iostream.h>
struct PLAY
{
    int Score, Bonus;
};
void Calculate(PLAY &P, int N = 10)
{
    P.Score++; P.Bonus+=N;
}
void main()
{
    PLAY PL={10,15};
    Calculate(PL, 5);
    cout<< PL.Score << ":" << PL.Bonus << endl;
    Calculate(PL);
    cout<< PL.Score << ":" << PL.Bonus << endl;
    Calculate(PL, 15);
    cout<< PL.Score << ":" << PL.Bonus << endl;
}
```

32. Write a program to find the sum of all elements of a matrix, which lie on either diagonal.

33. Write a program to read a string and display the number of different types of characters, i.e. lowercase vowels, uppercase vowels, Uppercase Consonants, lowercase Consonants.

34. Write a program to check whether the given number is palindrome or not.

35. Write a C++ program to compute the sum of the following series.
\[1 - \frac{X^2}{2!} + \frac{X^4}{4!} - \frac{X^6}{6!} + \ldots \frac{X^n}{n!}\]

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