INDIAN SCHOOL SOHAR
TERM I EXAMINATION (2018 – 19)
COMPUTER SCIENCE

CLASS: XI   **MAX. MARKS: 70**

DATE: 20/09/2018   **DURATION: 3 HRS.**

General Instructions:

- *All the questions are compulsory*
- *Answer the questions carefully after reading the questions and write question numbers correctly*

1. C++ language is developed by _____.   1

2. Give the ASCII code range for uppercase alphabets (A – Z) and digits (0 – 9).   1

3. What is the purpose of a header file in a program?   1

4. Assume that x, y and z are all integers and are equal to 50, 20 and 6 respectively. What is the result of x/y/z?   1

5. Suppose A, B, C are integer variables where A = 3, B = 3, C = -5 and X, Y, Z are floating point variables where X = 8.8, Y = 3.5, Z = -5.2. Determine the value of the following expressions: 2 x 1 = 2
    i.   (A * C) % B
    ii. int (X) % int (Y)

6. What will be the result of the following expressions if a = 3, b = 6, c = 4, d = 2?   1
    a + b > c && b – c < d || b + d >= a + c

7. Write the output of the following program when a = 60 and b = 70:   1
    ```
    #include <iostream.h>
    void main()
    {
        int i = j = 10;
        if(a < 100)
        {
            if(b > 50)
                ++i;
        }
        else
            ++j;
        cout << "i = " << i << "\n" << "j = " << j << "\n";
    }
    ```

8. Explain isalnum() built – in function with appropriate example.   1

9. Convert Octal number to equivalent Binary number: $(576)_8$ 1

10. Convert Binary number to equivalent Hexadecimal number.   2

a) $(1011011)_2$　　　　　　　　　　　b.　$(110101110)_2$

11. Convert Hexadecimal number to equivalent Octal number.　　　　　　　2

　　a. $(4D8)_{16}$　　　　　　　　　　b. $(E5A)_{16}$

12. List 4 types of C++ tokens.　　　　　　　　　　　　　　　　　　2

13. Explain switch statement with syntax and appropriate example.　　　　2

14. Differentiate between '=' and '==' operators with appropriate example.　2

15. Differentiate between while and do-while loop with appropriate example.　2

16. Explain postfix increment/decrement is different than prefix increment/decrement with example.　2

17. Explain any two logical operators with appropriate example.　　　　　2

18. Explain "for" loop with syntax and example.　　　　　　　　　　　2

19. Explain strcat() string function with syntax and appropriate example.　　2

20. Differentiate between a Run Time error and Syntax error with suitable example.　2

21. What are literals in C++? How many types of literals are allowed in C++ programming?　2

22. An unsigned integer range is twice as large as signed integer. Explain how.　2

23. Explain the concept of arrays with syntax and appropriate example.　　　2

24. What will be the result of the following expressions?　　　　　　　　2
　　a. (5 > 3) && (6 <= 6) || (5 != 6)
　　b. ((6 <= 6) || (5 != 6)) && (5 < 3)

25. Explain the conditional operator with an appropriate example.　　　　　2

26. What will be the output of the following program?　　　　　　　2 x 1 = 2
```
void main()
{
    int val, res, n = 2000;
    cin >> val;
    res = n + val > 2750 ? 450 : -450;
    cout << res;
}
```
(i)　　If the input is 750　　　　　　　(ii)　if the input is 850

27. Take input for 'n' number of terms. Write programs for the following patterns:　　　4 x 2 = 8
　　a) $x + x^2 + x^3 + x^4 + x^5 + \ldots + x^n$
　　b) 5
　　　 4 5
　　　 3 4 5
　　　 2 3 4 5

1 2 3 4 5
c) 1
   1 2 1
   1 2 3 2 1
   1 2 3 4 3 2 1
   1 2 3 4 5 4 3 2 1

d) Fibonacci series: 0 1 1 2 3 5 8 ……. Upto n terms

28. Write a menu driven program which has following options :   2
   a. Area of a circle
   b. Area of a rectangle
   c. Exit

   The output menu should be displayed as shown above. Prompt the user for their choice and process the coding accordingly. Finally, display their respective output. Then after the user presses any key the menu should be displayed again with the entire output screen cleared.

29. Write a program that compares two strings s1 & s2 where s1="Expression" and s2="Expressive".   2

30. Write a C++ program that inputs experience and age of a person. The salary of the person is 6000 if the person is experienced and his age is more than 35 years, otherwise if the person is experienced and his age is more than 28 but less than 35 then the salary should be 4800 otherwise for experienced person the salary should be 3000 and for inexperienced person the salary should be 2000.   2

31. Write a program which takes input of two strings and then concatenates two strings without using built – in string function. For eg. Concatenation of strings s1 = "Hello" and s2 = "India" gives output s1 = "Hello India".   2

32. Write a program to transpose a matrix, when a matrix of 3 x 3 is taken as input.   2

33. Write the output of the following program: 2

```
void main()
{
    char name[15] = "IntRAneT";
    for( int i = 0; i < strlen(name); i++)
    {
        if(islower(name[i]))
            name[i] = toupper(name[i]);
        else if(isupper(name[i]))
        {
            if(i % 2 == 0)
                name[i] = tolower(name[i]);
            else
                name[i] = name[i - 1];
        }
    }
    cout << name;
}
```

34. Write the output of the following program: 2

```
#include <iostream.h>
#include <conio.h>
void main()
{
        int rows;
        cout << "Enter number of rows: ";
        cin  >> rows;
        for(int i = rows; i >= 1; --i)
        {
             for(int j = 1; j <= i; ++j)
             {
                     cout << j << " ";
             }
             cout << endl;
        }
}
```

35. Find the syntax error(s), if any , in the following program and rewrite the correct code.   2

```
#include <iostream.h>
void main()
{
        int R; W = 90;
        while ; W > 60
        {       R = w – 50;
                switch(W)
                {
                        20 : cout << "\nLower Range" << endl;
                        30 : cout << "\nMiddle Range" << endl;
                }
        }
}
```

36. Find the output of the following C++ program.   2

```
#include <iostream.h>
void main()
{
        int a[5] = {5, 10, 15, 20, 25};
        int i = 0, j = 0, k = 1, m = 0;
        i = ++ a[1];
        j = a[2] ++;
        m = a[k];
        m = a[k+2];
        cout << i << " " << j << " " << k << " " << m;
        for(int x =0; x < 5; x++)
               cout << a[x] << " | ";
}
```