



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

No. of Printed Pages: 4

CLASS: XI

DATE: 26/11/2018

MAX. MARKS: 70

DURATION: 3 HRS.

General Instructions:

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

1. What are recursive functions? 1
2. What are digits of precision for float and long double datatype? 1
3. What is the range for short and unsigned integer datatype? 1
4. Write the equivalent C++ expression for the following expressions: 4 x 1 = 4
  - a.  $ut + \frac{1}{2} ft^2$
  - b.  $p + q / (r + s)^4$
  - c.  $\left( \frac{3x + 5y - 8xy}{5x + 3y - 2yx} \right)^{3/2}$
  - d.  $2 - ye^{2y} + 4y$
5. Evaluate the following C++ expression: 1  
int a, mb = 2, k = 4;  
 $a = mb * 3/4 + k / 4 + 8 - mb + 5 / 8$
6. What will be the output of the program? 1  
int i = 54/5;  
char res = i % 3 == 0 ? 'A' : i % 4 == 0 ? 'B' : 'C';  
cout << res;
7. Explain isalpha() and isspace() built – in functions with appropriate examples. 2
8. Convert hexadecimal numbers to equivalent Binary number:  $(4A8C)_{16}$  and  $(FACE)_{16}$  2 x 1 = 2
9. Convert Binary numbers to equivalent Octal numbers. 2 x 1 = 2
  - a)  $(11011110101110)_2$
  - b)  $(111110110101)_2$
10. Convert Hexadecimal number to equivalent Decimal number:  $(2C9)_{16}$  1
11. Construct logical expressions to represent the following conditions: 2
  - a) weight is greater than or equal to 85 but less than 115
  - b) x is even
  - c) donation is in the range 4000 to 5000 or guest is 1.

d) ch is an uppercase letter.

12. Explain char and char array (i.e. char[]) datatype with appropriate examples. 2
13. Differentiate between float and double datatype with its range. 2
14. Explain structures with its syntax and example. 2
15. Explain user defined functions with its syntax and example. 2
16. Write the rules for declaring a variable name. 2
17. Explain switch statement with syntax and appropriate example. 2
18. Differentiate between explicit and implicit type casting with appropriate example. 2
19. Differentiate between '/' and '%' operator with appropriate example. 2
20. Explain strcpy() built – in function with its syntax and example. 2
21. Differentiate between using arrays in structure and array of structures with appropriate example. 2
22. Differentiate between strcmp() and strcmpi() functions with appropriate example. 2
23. Write a program to input a three digit number and print it in words. (Note: Input number is 372 then output is “Three Hundred Seventy Two”) 2
24. Write a program to find the largest and smallest elements in a 1D – array. 2
25. Write a program to count the number of words in an input string. 2
26. Write a menu driven program which displays the count of alphabets and digits in an input string : 2
  - a. Number of alphabets
  - b. Number of digits
  - c. ExitThe output menu should be displayed as shown above. Prompt the user for their choice and process the coding accordingly. Then after the user presses any key the menu should be displayed again with the entire output screen cleared. (Take str[]= B-2, 305, Way no 3674, Al-Hambar, Sohar)
27. Write a program to count number of vowels and consonants in an input string. (Take str[]=”You have stomach ache because you have eaten too many apples”.) 2
28. Write a C++ program that reads a string and converts it to uppercase. If any character is already in uppercase then display a message “Already in uppercase”. Display the final output string. 2
29. Write a program which replaces every occurrence of character ch1 in the string with character ch2. (For eg. str[]=”Kavi is a boy. Kavi is playing”. Replace ‘K’ with ‘R’. Output: ”Ravi is a boy. Ravi is playing”) 2
30. Write a program to multiply two 2x2 matrices whose values are input by the user. 2
31. Write a definition for a function SumSeries() with two argument parameters (double x and int n). The function should return a value of type double and it should perform sum of the following series:  $x - x^2/3! + x^3/5! - x^4/7! + x^5/9! - \dots$  upto n terms 2

32. Write a function FiboSeries() using recursion to print the fibonacci series upto n terms. 2  
(Note: Fibonacci series is 0 1 1 2 3 5 8 13 21 ..... upto n terms)
33. Write a program that reads two strings and adds the smaller string into the bigger string. In case both strings are same then add first string to second string. 2
34. Write a program using structure to prepare the invoice from the following data: 2  
Customer number, Customer name, Item name, Quantity, Unit price, Discount percentage, Bill amount  
**Note:** Total amount = unit price \* quantity and Bill amount = total amount – (discount percentage \* total amount / 100)
35. Write the output of the following program: 2
- ```
int calc(int U)
{
    if(U % 2 == 0)
        return U + 10;
    else
        return U * 2;
}
void pattern(char M, int B = 2)
{
    for(int CNT = 0; CNT < B; CNT++)
        cout << calc(CNT) << M;
    cout << endl;
}
void main()
{
    pattern('*');
    pattern('#', 4);
    pattern('@', 3);
}
```
36. Write the output of the following program: 2
- ```
#include <iostream.h>
struct pixel
{
    int c, r;
};
void display(pixel p)
{
    cout << "col " << p.c << " row " << p.r << endl;
}
void main()
{
    pixel x, y, z;
    x.c = 40;
```

```

x.r = 50;
z = x;
x.c += 10;
y = z;
y.c += 10;
y.r += 20;
z.c -= 15;
display(x);
display(y);
display(z);
}

```

37. Write the output of the following program: (**Note:** Values entered are 20, 65, 68 for hr, min & secs respectively)

2

```

#include <iostream.h>
struct time_s
{
    int hr, min, secs;
};
void upd_time(time_s new_t)
{
    ++ new_t.secs;
    if(new_t.secs >= 60)
    {
        new_t.secs -= 60;
        ++ new_t.min;
    }
    if(new_t.min >= 60)
    {
        new_t.min -= 60;
        ++ new_t.hr;
    }
    if(new_t.hr >= 24)
        new_t.hr -= 24;
    cout << "\nUpdated time : " << new_t.hr << ":" << new_t.min << ":" << new_t.secs;
}
void main()
{
    time_s curr_time;
    cout << "\nEnter the time (hh:mm:ss) : ";
    cin >> curr_time.hr >> curr_time.min >> curr_time.secs;
    upd_time(curr_time);
    cout << "\nNew time : " << curr_time.hr << ":" << curr_time.min << ":" << curr_time.secs;
}

```