Sample Paper – 2010
Class – XI
Subject – Computer Sience

Time: 3 Hrs   **F.M: 70**

General Instructions:
1. **All Questions are compulsory.**
2. **Programming Language is C++.**

1. Write a program in c++ to calculate the commission for the salesmen. The commission is calculated as follows.
                4

Sales Made	Commission Rate
30001 onwards	15%
22001 to 30000	10%
12001 to 22000	7%
5001 to 12000	3%
0 to 5000	0%

2. Write a program to calculate and print the roots of a quadratic equation $ax^2+bx+c=0$.   4

3. A bank accepts a fixed deposit for one year or more and the policy it adopts on interest is as follows: 4
        i) if a deposit less than Rs. 2000 and for 2 or more years , the interest rate is five percent compound annually.
        ii) if a deposit is Rs. 2000 or more but less than Rs. 6000 and for 2 or more years, the interest rate is seven percent compounded annually.
        iii) if a deposit is more than or equal to Rs. 6000 and for 1 year or more , the interest rate is eight percent compounded annually.
        iv) on all deposits for 5 years or more , interest is ten percent compounded annually.
        v) on all other deposits not covered above conditions, the interest is three percent compounded annually.
        Given the amount deposited and number of years, write a program to calculate the money in the costumers account at the end of the specified time.

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4. Write a program in c++ using conditional operator to find the largest of three numbers entered through keyboard.
       4

5. A computer programming contest requires teams of 5 members each. Write a program that ask the user to enter number of players and then display the total number of teams and number of player left over.
       4

6. Write a program to calculate the area of a circle or triangle or rectangle according to the choice given by the user.   4

7. What will be the output of the following code fragment?   2

```
               .
               .
               .
        int year;
        cin>> year;
        if(year % 100==0)
                {
                if(year%400==0)
                        cout<<"Leap";
                }
        else
                cout<<" Not  a century year.
```

   If the input given is
                i)   2000
                ii)   1900
                iii)   1971

8. What is dangling else problem? How is it overridden? Give example.   2
9. Predict the output of the following code fragment: 2
        i)   int a, b=3;
                cin>>a;
                if(a)
                        b=a++ -1;

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```
            cout<< "a="<<a<<endl;
            cout<<"b="<<++b<<endl;
    When the value of a is input as 6.
    ii)     cin>>a;
            if(a=5)
                    cout<<"Five";
            else
                    cout<<" Not Five";
```
if the input given is 7.

10. Distinguish between a unary, binary and a ternary operator. Give example of c++ operators for each one of them.
2

11. What is type conversion? How many types of type conversion is allowed in c ++. Explain with example.   2

12. Name the header files required for successful execution of a program that uses the following components: 2

      i) endl   ii) setprecision( )   iii) ceil( )   iv) fabs( )

13. What is the effect of access specifiers on data type?

    How does it affect the floating point data type?   2

14. What are the differences between syntax and runtime errors? Give example.
2

15. What is the memory requirement for the following constants?
2

      i) " Meera\'s Birthday" ii) "\?" iii) '\a' iv) "my name"

16. Write the equivalent C++ expression for the following expressions: 2

    i) $\tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{5} + \tan^{-1}\frac{1}{7} + \tan^{-1}\frac{1}{8} = \frac{\pi}{4}$

    ii) $y = [\sin x]^{\tan x} + [\cos x]^{\sec x}$

17. What are constants? How these are different from ordinary variables?   2

18. Predict and correct the logical error present in the following code fragment:
2

```
            if(k=1)
                    cout<<"ONE";
            else
                    cout<<" NOT ONE";
```

19. Define the following terms: 3
    i) Refference Variable
    ii) Abstraction

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   iii) pointer

20. Predict the output of the following codes: (Make sure the Syntax is correct)   3

i) if(1)
  cout<<" Be careful";
  cout<<"You might commit a mistake";

ii) if(!5)
  cout<<" How many times";
  else
  cout<<"No more please";
  cout<<" O.K";

iii) if(0)
  cout<<"Third time again";
  cout<<"Last chance";
  else
  cout<<" Very good";

21. Write alternate code for the following codes using   3
  i) Only if
  ii) Using conditional operator
     if(a= = 0)
        cout<<" Zero";
     if(a= = 1)
        cout<<" One";
     if(a = =2)
        cout<<" Two";

22. Fill in the blanks: 3
    i) $(100011101)_2=(_____)10$
    ii) $(354)8=(_____)2$
    iii) $(A6D12)16=(\_\_\_\_)8$

23. Write the 1's Complement form of the following binary numbers: 1
      100010111, 11101

24. Expand the following: BIOS, ISCII, SJN, SRAM   1
25. Write shortly about the 3rd generation computers.   1
26. What do you mean by Non-Preemptive scheduling?   1
27. Write the Name of 4 Operating systems that are used world wide.   1
28. What do you mean by utility software? Give one example.   1
28. What is BOSS? Write the names of software of this family.   1
29. Define the term Booting.   1
30. What is a Path?   1
31. What is a keyword? Is 'ASM' a key word?   1

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