**Sample Paper – 2013**

**Class – XI**

**SUBJECT: COMPUTER SCIENCE**

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**General Instructions:**

**1.All questions are compulsory**

**2.Programming language: C++**

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1. a. Give the full form of EDVAC and MIPS. **1**

 b. Mention some of the applications that use super computers. **1**

 c. How is a compiler different from an interpreter. **1**

 d. Give two major innovations in the second generation computers? **1**

2. a. What is meant by free formatting? **1**

 b. “Logical errors can usually be detected by the compiler”. Do you agree with the statement?

Justify? **1**

 c. Mention the steps that you would follow while writing a program. **2**

 d. What is the significance of documentation? **2**

 e. What is meant by preventive and perfective maintenance? **2**

3. a. Mention the header files for the following built in functions. **2**

 1. getch() 2. exit() 3. setprecision() 4. gets()

 b. What is wrong with the following statements?

 1.const int y; 2. char ch=A; 3. long float x; 4. cin>>a>>’\n’; **1**

 c. What do you mean by dynamic initialization of a variable? Give an example **2**

 d. Write declarations for the following. **(4 x ½=2)**

 1. A reference to a floating point variable.

 2. An array of marks of 5 subjects of 10 students.

 3.1D array **P** and initialize with first five Fibonacci series.

 4. String **Sname** with intial value WELCOME TO C++.

4. What will be the output for the following program segments?

 (Consider all the necessary header files are included) **(5 x 2=10)**

 a. int a=5;

 b=a++;

 cout<<a++;

 cout<<++b<<endl<<a+b;

 b. int x=10,y=15;

 float P;

 P=(float) x/y;

 cout<<P;

 c. char p[]=”First-Semester Examination2012”;

 int i=4;

 while (p[i]!= ‘ ’)

 cout<<(p[i++]);

 d. int x=0;

 for(int i=0;i<5;i++)

 for(int j=0;j<I;j++)

 x += i\*j;

 cout<<x;

e. int i,j,k,a[]={5,10,15,20};

 a[0]=10;

 for(i=0;i<=2;i++)

 a[i]=a[0]+i;

 for(i=3;i>=0;i--)

 cout<<a[i]<<” “;

f. Identify the syntactical errors and rewrite the program. **2**

 #include<iostream.h>

 void main()

 {

 char name[10];

 float mark[10];

 clrscr();

 cout<<enter the name of student”

 gets(name[i]);

 for(i=0;i<10,i++)

 cout<<”enter the marks of i+1 subjects”;

 cin>>marks[i];

 cout<<”Name /t/t marks”

 puts(name);

 for(i=0;i<10,i++);

 cout<<mark[i]<<” “;

 }

5. a. 1. What is type casting and type promotion? Illustrate using examples. **2**

 2. What is arithmetic assignment operator? Give examples. **1**

 b. Write appropriate statements for the following: **(5 x 1=5)**

 1. Print the elements of the 3rd column of the array X[5][9].

 2. Calculate the square root of the sum of the squares of the first 100 odd elements

 of the numeric list P.

 3. To find the length of the given string S.

 4. To calculate the function F=2x2+3x+4 when x<2 and 0 otherwise.

 5. Given the number of players n,find the number of teams formed and the number of players left

 over, if a team comprises of 5 players.

 c. **Convert the following as directed**: **(2 x2=4)**

 1.  **nested** **If-else to switch statement**

 int x,y,z;

 cin>>x>>y>>z;

 if (x==1)

 cout<<x\*y+5;

 else if (x==2)

 cout<<x+2+y;

 else if (x==3)

 { z=(x\*y\*5)/2;

 cout<<z;}

 else cout<<x<<’ ‘<<y<<’ ‘<<z;

 2. **nested** **while to nested for loop**

i=5;

 while(i>0)

 { k=1;

 while (k<5)

 { cout<<k+I;

 k+=2;}

 cout<<endl;i++;

 }

 cout<<endl;

 d. Evaluate the expression:given x=1,y=2,z=3 **2**

 (x++ \*y>z--)&&!(x+z==10)||(z%2+5<x/5)

 e. How many times the following loop will be executed? **1**

 x=500;

 while(x<500)

 { x-=600;

 if (x<0)

 break;

 }

6. **Answer the following** :

a. Write a program to find the ticket fare of a bus according to the code of a bus. **2**

 **code fare**

 d Rs.4

 r Rs.5

 w Rs.10

 c Rs.12

b. . Write a program in C++ to prepare a frequency distribution table of the percentage marks in Computer studies of sixty students, to be taken as inputs, into the following categories **3**

 Category Marks(%)

 Fail 0-34

 Pass 35-59

 Good 60-79

 Very Good 80 and above

 The output should display the categories and the corresponding frequencies, i.e, the number of students in each category in two columns.

c. Write a program to read a 5 digit number and exchange the first and last digit of that number.

 For example if the given number is 45372 then the output should be 25374. **3**

d. Write a program to sort all the positive numbers in 1D array in ascending order. **4**

 For eg. The given array

 5, -1, -3, 4, 2, 3

 Output

 2, -1, -3, 3, 4

e. Write a program to swap the elements in the even location with its following odd location **2**

 for example if the input array is 2 3 4 8 6 12 9

 then the output is 3 2 8 4 12 6 9

f. Write a program to read a matrix of order 3 x 3 and do the following **4**

1. if the array is 1 2 3 then the output is 0 2 0

 4 5 6 4 0 6

 7 8 9 0 8 0

 b)

 if the array is 1 2 3 then the output is 7 8 9

 4 5 6 4 5 6

 7 8 9 1 2 3

g) Write a program to read a string and print the total number of alphabets, digits and special characters in that string. **3**

h) Write a program to multiply two matrices of order 3 x 3. **3**

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