

**Model Question Paper**  
**Class- XI**  
**Computer Science**

**M.M. :70**

**Time:3 hrs.**

**Instructions:**

- {1} All Question are compulsory.
- {2} Programming language :c++

- Q.1** [A] Explain functional components of a Computer? 2  
[B] Write different between application software and system software. 2  
[C] Define Hybrid computer? 1  
[D] What function of operating system plays to manage memory. 1
- Q.2** [A] Write differences between logical errors and syntax errors. 2  
[B] What do you mean by robustness of a program. 2  
[C] What is guard code. 1  
[D] What is the process of translation of the algorithm ,into a program, called? 1  
[E] What are the characteristics of a good program ? 2  
[F] Name two types of compilation errors ? 2
- Q.3** [A] Name the header files to which the following belongs to : 2  
(i) getch() (ii) isdigit() (iii) sqrt() (iv) atoi()
- [B] write output for following code: 2  

```
int val,n=1000,;  
cin>>val;  
res=n+val>1500?100:200;  
cout<<res;  
i) If the input is 1000.  
ii) If the input is 200.
```
- [C] Write the equivalent c++ expressions- 2  
(1)  $p=2(1+b)$   
(2)  $z=2(p/q)^2$   
(3)  $s=1/2mv^2$   
(4)  $x=-b+\sqrt{(b^2-4ac)}/2a$
- [D] Write difference between keyword and identifier. 2
- Q.4** [A] Draw a flowchart that print the smallest of three given no. 2  
[B] Rewrite the following program after removing syntactical errors, underline each 2  
Correction.

```

#include<iostream.h>
Void main()
{
    const MAX = 0 ;
    int a, b;
    cin<<a>>b;
    if(a > b )
    MAX = a;
    for(x=0;x<MAX; x++)
    cout<<x;
}

```

[C] Write a program in c++ to print Fibonacci series:- 3

0,1,1,2,3,5,8 .....

[D] Write a program in c++ to find out factorial of a given no. 3

**Q.5** [A] Write a program in c++ to replace every space in a string with hyphen. 2

[B] Find the total no. of elements and total size of the following array: 2

(i) int student[20]                      (ii) float A[4][5]

[C] Rewrite the following program after removing syntactical errors,underline each 2

Correction.

```

#include<iostream.h>
main()
{
    int sum[2,4];
    for(i=0;i<2;i++)
        for(j=0;j<=3;i++)
        { cout<<sum;
        }
}

```

[D] Find out the output for the following program: 4

```

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

```

[E] Write a program in c++ to find row and column sum of a matrix . 3

[F] Give the proper array declaration for the following :- 2

(i) Declare an integer array A which can hold 30 values.

(ii) declare a two dimensional array called MIN ,4\* 5 of integer.

**Q.6[A]** What are the 3 steps using a function . **3**

**[B]** Find the output of the following program: **2**

```
#include<iostream.h>
void Execute (int& x,int y=200)
{
    int temp = x + y;
    x+= temp;
    if(y!=200)
    cout<<temp<<x<<y;
}
main( )
{
    int a = 50,b=20;
    Execute(a,b);
    cout<<a<<b;
}
```

**[C]** Write a function in C ++ having 2 parameters x and n of integer type with result type float to find the sum of following series :-

$1 + x/2! + x^2/ 3! + \dots + x^n/n+1!$  **3**

**[D]** Write a program to calculate the sum of n natural numbers by using function. **3**

**Q. 7[A]** Convert the following into its binary equivalent codes. **4**

**(i)**  $(84)_{10} = (?)_2$

**(ii)**  $(2C9)_{16} = (?)_{10}$

**(iii)**  $(101010)_2 = (?)_{10}$

**(iv)**  $(3674)_8 = (?)_2$

**[B]** Express -4 in 1's complement form. **1**

**[C]** What is the function of a bus . **1**

**[D]** Write two types of cache memory. **2**

**[D]** write difference between SRAM and DRAM. **2**

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**MARKING SCHEME**

**Class- XI**  
**Sub: Computer Science**

**Marks-70**  
**Time-3hrs.**

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**Q.1[A]** 1 mark for giving names of functional units(input/output/memory)  
1 mark for explanation of the working of functional units.

**[B].**2 marks for any 2 correct differences.

**[C].**1 mark for correct definition of hybrid computer.

**[D].** 1 mark for correct answer (memory management system)

**Q.2[A].** 2 mark for any 2correct differences

**[B].** 2 mark for correct definition.

**[C].** 1 mark for correct definition.

**[D].** 1 mark for correct answer (coding).

**[E].** 2 marks for any 2 characteristics of good program with explanation.

**[F].** 2 marks for correct answer that are

1. Syntax error
2. Semantic error

**Q.3[A].** Name the header file for which the following belongs to :-

1. getch() – conio.h
2. isdigit() – ctype.h
3. sqrt() – math.h
4. atoi() – stdlib.h

1/2 Mark for each correct answer

**[B].**Output will be

1. 100
2. 200

1 mark for each correct answer

**[C]** Equivalent expressions are :-

- a)  $p=2*(1+b)$ ;
- b)  $z=2*\text{pow}((p/q),2)$  or  $2*p/q*p/q$ ;
- c)  $s=1/2*m*v*v$ ; or  $s=1/2*m*\text{pow}(v,2)$ ;
- d)  $x=-b+\text{sqrt}(b*b-4*a*c)/2*a$ ; or  $x=-b+\text{sqrt}(\text{pow}(b,2)-4*a*c)/2*a$ ;

1/2 Mark for each correct answer

**[D]** 2 marks for any 2 correct differences

**Q.4 [A].** 2 Marks for correct flowchart.

```

[B] void main()
{
const int MAX=0;
int a,b;
cin>>a>>b;
if (a>b)
MAX= a;
for(x=0;x<MAX; x++) // x is an undefined symbol
cout<<x;

```

½ mark for each correction

[C]. 3 marks for writing correct program

(

- ½ mark for including correct header file
- ½ mark for declaring variables
- ½ mark for assigning values
- 1 mark for correct logic
- ½ mark for print series

)

[D]. 3 marks for writing correct program

(

- ½ mark for including correct header file
- ½ mark for declaring variables
- ½ mark for enter variable/number
- ½ mark for correct loop
- ½ mark for correct logic
- ½ mark to print factorial of given no.

)

Q.5[A] 2 mark for writing correct program :-

(

- ½ mark for including correct header file
- ½ mark for entering string
- 1 mark for correct logic & correct result

)

[B] ½ mark for each correct answer

- a) total no. of elements = 20  
total size = 20\*2 = 40 bytes
- b) total no. of elements = 4\*5=20  
total size = 4\*4\*5= 80 bytes

```

[C]  main()
      {
      int sum[2][4];
      for (int i=0; i<2; i++)
      {
      for (int j=0; j<=3 ; j++)
      }
      cout<<sum[i][j];
      }

```

½ mark for each correction

**[D]** 1 mark for each correct answer  
12,15,1,0

**[E]** 3 marks for writing correct program :-

(  
½ mark for including correct header files.  
½ mark for declaring variables  
½ mark for reading an array  
½ mark for calculating column sum  
½ mark for calculating row sum  
½ mark to print row sum & column sum  
)

**[F]** 1 marks for each correct declaration :-

- (i) int A[30];
- (ii)int MIN[4][5];

**Q.6[A]** 1 mark for each correct step:

- i)function declaration.
- ii)function definition.
- iii)function calling.

**[B]** 1 mark for each correct answer

- (i) a= 120
- (ii)b=20

**[C]**

3 marks should be given for correct definition of function

- ½ mark for correct function header file
- ½ mark for declaring variables.
- ½ mark for correct logic for calculating factorial
- 1 mark for correct logic for calculating sum of terms
- ½ mark for return sum.

```

[D] void total ( int n)
    {
        int i,sum ;
        sum =0;
        for(i =1;i<=n;i++ )
        {
            sum =sum + i;
        }
        cout<<"sum of natural numbers is"<<sum;
    }

```

3 marks should be given for correct definition of function

- ½ mark for correct function header file
- ½ mark for declaring variables.
- ½ mark for assign 0 to sum;
- 1 mark for correct logic for calculating sum
- ½ mark for print sum

**Q.7[A]** 1 Mark for each correct answer :

- (i)  $(84)_{10} = (1010100)_2$
- (ii)  $(2C9)_{16} = (713)_{10}$
- (iii)  $(101010)_2 = (42)_{10}$
- (iv)  $(3674)_8 = (11110111100)_2$

**[B]** 1 Mark for finding correct complement of number

**[C]** 1 Mark for correct function of bus

**[D]** 1 Mark for each correct type

**[E]** 2 Mark for any 2 correct differences between SRAM and DRAM

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**Model Question Paper**  
**Class- XI**  
**Computer Science**

**M.M. :70**

**Time:3 hrs.**

**Instructions:**

- {1} All Question are compulsory.
- {2} Programming language :c++

- Q.1[A]** How is a compiler different from interpreter ? 2  
**[B]** What do you understand by application software ? 2  
**[C]** Who invented the punched card ? 1  
**[D]** Name the super computers developed in India ? 1
- Q.2[A]** What is meant by Graceful Degradation ? 2  
**[B]** Why are logical Errors harder to locate ? 2  
**[C]** Write steps required to develop a program and explain the steps briefly. 3  
**[D]** Write an algorithm to compute factorial of a given number. 3
- Q3[A]** Name the header files to which the following belongs to:- 2  
(i) exit( ) (ii) gets( ) (iii) tolower( ) (iv) malloc( )
- [B]** What will be the output of the following statements: 2  
(i) a = sqrt(16)  
(ii) b= strlen("COMPUTER")  
(iii) c = ceil(13.45)  
(iv) d =abs(-6)
- [C]** What is the purpose of sizeof operator ? 2  
**[D]** Write differences between Unary Operator and Binary Operator 2
- Q.4[A]** Write differences between entry controlled loop and exit controlled loop 2  
**[B]** Write a program to input a character and to print whether a given character is an 2  
alphabet ,digit or any other character.  
**[C]** Give the output for the following program segment: 2  
(i) for(int i=10;i>6;i=i-2)  
cout<<i<<endl;  
(ii) for(int i=-5;i>-7;i--)  
cout<<i+1<<endl;
- [D]** Write a menu driven program to calculate area of a circle,a rectangle depending upon 3  
user's choice.
- Q.5[A]** what is the difference between following two statements :- 1

- (i) int sum[10];
- (ii) int sum[10]= 20;

**[B]** Rewrite the following program after removing the syntactical errors. underline each correction. **3**

```
#include<iostream.h>
main( )
{
  int x[5],y,z[5]
  for( i=0;i<5;i++
  {
    x[i] = i;
    z = i+3;
    y=z;
    x=y;
  }
}
```

**[C]** Find the output of the following program: **2**

```
#include<iostream.h>
main( )
{
  int a[4],i;
  for( i=0;i<4;i++)
  a[i] = 5*i;
  for(i=0;i<4;i++)
  cout<<a[i];
}
```

**[D]** Write a program to read a string and print how many words are stored in the string. **3**

**[E]** Write a program to find the sum of array elements. **3**

**Q.6[A]** What do you mean by function prototype ? **1**

**[B]** What is meant by scope ? Name all kinds of scope is supported by C++. **3**

**[C]** Find the output of the following: **3**

```
#include<iostream.h>
int max(int & x,int &y,int &z)
{
  if(x>y && y>z)
  { y++;
    z++;
    return x;
  }
  else
  {
```

```

        if(y>x)
            return y;
        else
            return z;
    }
void main( )
{
    int a=10,b=13,c=8;
    A= max(a,b,c);
    cout<<a<<b<<c;
    B= max(a,b,c);
    cout<<+a<<+b<<+c<<endl;
}

```

**[D]** Write a complete C++ Program that reads a float array having 15 elements. The program uses a function reverse( ) to reverse this array. 4

**[E]** Write a C++ function having two parameters x of type float and n of type integer 4  
 With result type float to find the sum of following series :-  
 $1 + x/2! + x^2/4! + x^3/6! + \dots + x^n/2n!$

**Q.7[A]** Difference between online UPS and offline UPS. 2

**[B]** Explain what are the two categories of printers ? 2

**[C]** What is access time. 1

**[E]** Convert the following into its binary equivalent number system :- 3

(i)  $(EB4A)_{16} = (?)_{10}$

(ii)  $(84)_{10} = (?)_2$

(iii)  $(B2F)_{16} = (?)_8$

**[F]** Find the eight bit one's complement form of the following: 2

- (i) -14                      (ii) -49

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**MARKING SCHEME**

**Class- XI**  
**Sub: Computer Science**

**Marks-70**  
**Time-3hrs.**

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**Q.1[A]** 2 marks for any 2 correct differences. .  
**[B]**.2 marks for correct definition.  
**[C]**.1 mark for correct answer.  
**[D]**. 1/2 mark for each correct answer (PARAM,ANURAG)

**Q.2[A]**. 2 mark for correct definition  
**[B]**. 2 mark for correct reason.  
**[C]**. 1 mark for each correct steps.  
**[D]**. 3 mark for correct algorithm.

**Q.3[A]** Name the header file for which the following belongs to :-

1. exit() – process.h
2. gets() – stdio.h
3. tolower() – ctype.h
4. malloc() – stdlib.h

**[B]** 1 mark for each correct answer .

- (i) 16
- (ii) 8
- (iii) 14
- (iv) 6

**[C]** 2 mark for correct definition

**[D]** 2 marks for any 2 correct difference .

**Q.4[A]** 2 Mark for any 2 correct difference

**[B]** 2 Marks for writing correct program

- ( 1/2 mark for including correct header file  
1/2 mark declaring variable  
1/2 mark for check for alphabets  
1/2 mark for check for digits and other characters  
)

**[C]** (i) 1 Mark for correct output

10,8

(ii) 1 Mark for correct output

-4,-5

**[D]** 3 Marks for writing correct program

- ( 1/2 mark for including correct header file
- 1/2 mark declaring variable
- 1/2 mark for coding of designing menu
- 1/2 mark for use switch or if....else statement
- 1/2 mark for check for calculate area of circle
- 1/2 mark for check for calculate area of rectangle. )

**Q.5[A]** 1 mark for writing correct differences.

**[B]** void main()  
 {  
 int x[5],y, z[5];  
 for(int i =0;i<5;i++)  
 { x[i] = i;  
 z = i+3;  
 y = z;  
 x[i] = y;  
 }  
 }

½ mark for each correct answer

**[C]** ½ Mark for each correct answer :- 0,5,10,15

**[D]** 3 Marks for writing correct program

- ( 1/2 mark for including correct header file
- 1/2 mark declaring variable
- 1/2 mark for enter a string
- 1 mark for correct logic
- ½ mark for print total no. of words
- )

**[E]** 3 Marks for writing correct program

- ( 1/2 mark for including correct header file
- 1/2 mark declaring variable
- 1/2 mark for enter array elements
- 1 mark for correct logic to calculate sum.
- 1/2mark for print sum.
- )

**Q.6[A]** 1Mark for defining function prototype

**[B]** 1 Mark for correct definition and 2 Mark for correct scope names.

**[C]** ½ mark for each correct answer.

13,13,8

14,9,9

**[D]** 4 Marks for writing correct program

- ( 1/2 mark for including correct header file

- 1/2 mark declaring variables
- 1/2 mark for declaration of function
- 1/2 mark for enter an array elements
- 1/2 mark for calling function
- 1 mark for correct definition of function
- 1/2 for print reverse array )

**[E]**

4 marks should be given for correct definition of function

- 1 mark for correct function header file
- ½ mark for declaring variables.
- 1 mark for correct logic for calculating factorial
- 1 mark for correct logic for calculating sum of terms
- ½ mark for return sum.

**Q.7[A]** 2 Marks for correct difference.

**[B]** 2 Marks for correct answer { 1. Impact 2. Non – Impact }

**[C]** 1 Mark for correct definition

**[D]** 1 Mark for each correct answer

(i)  $(EB4A)_{16} = (60234)_{10}$

(ii)  $(84)_{10} = (1010100)_2$

(iii)  $(B2F)_{16} = (5457)_8$

**[E]** 1 Mark for each correct answer

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## Class- XI [Computer Science]

Time Duration: 3 Hrs

M. M.

70

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General instruction:

- (i) All questions are compulsory
- (ii) Programming language : C++

### SECTION A

1. Explain any 2 important features of an Operating System.  
2
2. What is the difference between GUI and CUI?  
2
3. Write down the steps or DOS command to move a file from one location to another  
1
4. What is the difference between copying and moving a file.  
1

### SECTION B

1. Explain the following terms with an example of each. (2 marks each)
  - a. Comments
  - b. Identifiers
2. Write down the stages of program development process  
2
3. What do you mean by Programming Errors? Explain all types of errors.  
3
4. Explain the term LIVEWARE.  
1

### SECTION C

1. Write a program read a number from user and check whether the given no. is prime.  
5
2. Write a function to calculate the following series  
5  
$$1 + X/X^2 + 2X/X^3 + 3X/X^4 + \dots + NX/X^N$$
3. Evaluate the following C++ expressions where a, b, c are integers and d, f are floating point numbers. The Value of a=6, b=2, d=1.5 (2 marks each)
  - a)  $f = a + b/a$

b)  $c = (a++) * d + b$

c)  $c = a - (b++) * (--a)$

4. Find out the errors, underline them and correct them

4

```
Void MAIN()
{
    int a,b =2;
    cout<<> "Enter a Value
    cin<< "a";
    floating f = a/ b;
    if ( a= < b)
        cout<<a <<" Greatest ";
    else
        cout<<b << " Greatest";
    cout<<"Values of f is : "<< f;
    f += 13;
    cout << Now Value of f is << f;
}
```

5. Write a program to find factorial of a given number.

4

6. Write a function to accept a String Str , a character Ch and an integer pos. Now in String 'Str' character at position 'pos' should be replaced with character 'Ch'

4

7. Write a program to read a Matrix and print the Transpose of that Matrix .

4

8.

a. What are the types of selection statements available in C++? Give example of each type. 2

b Differentiate between system software and application software.

2 c. Differentiate between compiler and interpreter.

2

d. Explain unary, binary and ternary operators? Give example of each type.

3

e. What is the difference between break and continue? Give example.

3

### **SECTION D**

1. What are memory devices? Discuss RAM and ROM in detail

4

2. Explain the following terms

( 1

mark each)

a. PORT

b. REGISTER

c. ALU

d. NON-IMPACT PRINTER

3. What is the difference between online and offline UPS?

2

**Class- XI [Computer Science]  
MARKING SCHEME**

SECTION A

1. 1 mark each for any 2 features of an Operating System
2. 1 mark each for any 2 differences between GUI and CUI
3. 1 mark for writing DOS command  
Move <file> <target path>

OR

1 mark for writing correct steps to move a file in Windows environment

4. 1 mark for correct definition

SECTION B

1. One mark each for correct definition and 1 mark each for correct example
2. ½ mark each for mentioning correct Phases i.e.  
Analyze, Code, Debug, Test
3. 1 mark for correct definition. 2 marks (1/2 mark each) for mentioning correct types of errors i.e.  
Syntax, Run Time, Logical, Semantic
4. 1 mark for correct definition of LIVEWARE.  
Def: It is the term generally used for the people associated with and benefited from the computer System

SECTION C

1. One mark for including correct header files  
2 marks for correct logic  
2 marks for no syntax errors
2. One mark for writing correct prototype of function  
2 marks for correct logic  
2 marks for no syntax errors
3. 2 marks for finding each correct output

Output :

- a) 6
- b) 8.5
- c) -5

}

4. 1/2 mark for each identification and correction of error

```
#include <iostream.h>
```

```
void main()
```

```
{
```

```
int a,b =2;
```

```
cout<< "Enter a Value";
```

```
cin>>a;
```

```

float f = a/ b;
if ( a <= b)
    cout<<a <<" Greatest ";
else
    cout<<b << " Greatest";
cout<<"Values of f is : "<< f;
f + = 13;
cout << "Now Value of f is" << f;
}

```

5. One mark for including correct header files and writing comment  
     2 marks for correct logic  
     2 marks for no syntax errors
6. One mark for writing correct prototype of function and writing comment  
     2 marks for correct logic  
     2 marks for no syntax errors
7. One mark for including correct header files and writing comment  
     2 marks for correct logic  
     2 marks for no syntax errors
8. a. Correct definition 1 mark  
     Any 2 name 1 mark  
     b. Any 2 difference 1 mark each  
     c. Any 2 difference 1 mark each  
     d. 1 mark for each operator with example  
     e. 2 marks for difference and 1 mark for example

#### SECTION D

1. Correct definition - 1 mark
2. 1 mark for each correct definition of
  - a. PORT
  - b. REGISTER
  - c. ALU
  - d. NON-IMPACT PRINTER
3. Correct difference b/w online and offline UPS - 2 mark

