SAMPLE QP FOR XI HALF-YEARLY EXAMINATION
SUB: COMPUTER SCIENCE
CLASS - XI

TIME: 3 HOURS   M.M: 70

General Instruction:

i.   All the questions are compulsory.

ii. Please write down the serial number of the question before attempting it.

Q1. A) Write any two key features of fifth Generation computer.   [1]

B) Arrange the following in increasing order of speed and capacity: -   [1]

        Mini,   Embedded,   Super,   Mainframe,   Micro

C) What is Icon? Write name of any one type of Icon.   [1]

D) What are wild card characters? What is the use of wild card characters?   [1]

E) Convert the following: -   [1]

      (i) $(2AF)_{16}$ to $(?)_{10}$ (ii) $(38.21)_{10}$ to $(?)_2$

F) What are utilities software? Write any one example.   [1]

G) What is Operating System? Give one example of each single user and

multiuser Operating System.   [2]

H) Differentiate between compiler and Interpreter. Write one example of

interpreter and compiler based language.   [2]

Q2. A) What is polymorphism?   [1]
B) What is difference between an object and a class?   [1]

C) What is difference between a character and a string constant in C++?   [1]

D) What do you understand by dynamic initialization? Give one example.   [1]

E) What is variable? How many values are associated with it?   [1]

F) Write the corresponding C++ expressions for the following mathematical expression: [1]

(i) ut + ½ ft^2 (ii) e$^{|2x^2 - 4x|}$

Q3. A) What do you mean by type casting? What are its types?   [2]

B) Write any four identifiers naming rule.   [2]

C) What will be the value of the following, if j=5 initially?   [1+1=2]
   (i) (5 * ++j) %6   (ii) (5 * j++) %6

D) What is the result of the following expression?   [1+1=2]
    If x=2 & y=3, then
   (i) x>y ? cout<<x : cout<<y;   (ii) z = ++x + y + ++y;

E) Identify the errors in the following code segment and also write the corrected
   program.   [2]

```
#include <iostream.h>
int main( )
{      int number, class , sum;
       cout<<"Enter a number and class:" ;
       cin >>number >> class ;
       number + class = sum ;
       cout<<"Sum ="<<sum ;   }
```

Q4 A) Write a program that inputs radius and calculates volume of a sphere using
   the following formula :   [2]

$$\text{Volume} = \frac{4}{3}\pi r^2$$

B) Write a program to generate the following table using a single cout statement
   for output: [2]

Item	Price
Apple	60
Orange	40
Bananna	20

C) Write a program to convert given inches into its equivalent yards, feet
   and inches.   (1 yard = 36 inches, 1 foot = 12 inches)   [3]

D) Write a program to find the largest of the three given number   [3]

Q5. A) What is "Code Generation"? Can a program be executed before it?   [2]

   B) What is pretty printing?   [1]

   C) What do you understand by Guard Code?   [1]

   D) Write any two use of documentation.   [1+1]

   E) Differentiate between syntax and semantics error.   [2]

   F) Write any four characteristics of a good program.   [2]

Q6. A) What will be the output produced by following code fragment: [1]

```
int  i , j;
for(  i=10 ; i<=50 ; i+=10)
        j= i /2;
cout<< j<< "  " ;
```
   B) The break statement causes an exit from ……………………….   [1]

   C) The exit statement causes an exit from ………………………..   [1]

   D) Write one example of infinite loop using any one looping construct.   [1]

   E) Predict the output of the following code segment: -   [1+1=2]

```
int n=7 ;
cout<<" - -n= "<< - -n <<"\n";
cout<<"n= "<< n- - <<"\n" ;
```

   F) Write any two point of difference between a while loop and do-while loop.   [2]

   G) Write any two point of difference in operation in switch and if- else.   [1+1=2]

Q7. A) What is the problem of dangling – else? What is the default dangling –else matching and how it can be overridden ? [2]

B) Write an equivalent while loop for the following for loop: [2]

```
for ( int i=2, sum=0 ; i<=20 ; i=i+2 )
        sum += i ;
```

C) Rewrite the following code fragment using switch: [2]

```
If (ch == 'O')
        Outstanding ++ ;
If (ch == 'E')
        Excellent ++ ;
If (ch == 'G')
        Good ++ ;
If (ch == 'P')
        Poor ++ ;
else
        Unknown ++ ;
```

D) Write a do-while loop that displays numbers 2, 4, 6, 8, …, 18, 20 [2]

E) Write a C++ program to print the Fibonacci series upto the N terms. [3]
i.e.   0   1   1   2   3   5   8   ………………………… N

F) Write a program to print the following output: [3]

```
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1
```

Marking Scheme

S.No.	Model Answer	Marks
Q 1. A)	(i) **Parallel Processing-** many processors are grouped to function as one large group processor. (ii) **Superconductors –** a superconductor is a conductor through which electricity can travel without any resistance resulting in faster transfer of information between the components of a computer. ½ marks for each correct feature.	½ + ½ =1
B)	For correct arrangement one marks i.e. Embedded , Micro , Mini , Mainframe , Super	1
C)	Icon is a graphic symbol representing a window element. For Eg Application Icon, Shortcut Icon, Document Icon , Disk Drive Icon (Any one)	½ + ½ =1
D)	Two special characters (* and ?) are called wild card characters in windows. They are useful in searching files because they give flexibility in specifying paths and files.	½ + ½ =1
E)	(i) $(687)_{10}$ (ii) $(100110 . 0011010111)_2$ For each correct answer ½ marks	½ + ½ = 1
F)	½ marks for correct definition and ½ marks for example.	½ + ½ = 1
G)	One marks for correct definition of operating system and example of single user and multi user operating system ½ marks each.	1+ ½ + ½ = 2
H)	One marks for each correct difference and one marks for each correct example.	1+1=2
Q2.		
A)	Polymorphism is a property by which the same message can be sent to objects of several different classes, and each object can respond in a different way depending on its class. For correct definition of Polymorphism one marks.	1
B)	Object is an identifiable entity with some characteristics and behavior. OR Objects represents data and its associated functions under single unit. A class is a template/Blue-print representing a group of objects that share common properties and relationship. OR A class represents a group of similar objects.	1

	One marks for any one correct difference between an object and a class.	
C)	A character constant in C++must contain one character and must be enclosed in single quotation marks. A string constant is a sequence of characters surrounded by double quotes and each string-literal is by default added with a special character '\0' which marks the end of the string. One marks for any one correct difference between a character and a string.	1
D)	Initialization of variable at run time is called dynamic initialization. For eg. float avg = sum/count ; ½ marks for correct definition and ½ marks for correct example.	½ + ½ = 1
E)	Variable represent named storage locations, whose values can be manipulated during program run. Two values associated with a symbolic variable are rvalue (data value,stored at some location in memory) and lvalue (the address in memory at which its data value is stored). (½ marks for correct definition and ½ marks for specifying lvalue and rvalue)	½ + ½ = 1
F)	(i) u*t + ½ *f*pow(t,2) or u*t + ½ * f * t*t (ii) exp(fabs(2 * pow(x,2) - 4*x))	½ + ½ =1
Q3		
A)	one marks for correct definition & one marks for its types along with name	1+1=2
B)	½ marks for specifying each rule.	½ *4=2
C)	Output (i) o (zero) (ii) 1	1+1=2
D)	Result of expression (i) 1 mark for correct answer (ii) 1 mark for correct answer	1+1=2
E)	½ marks for each correction.	½ *4 = 2
Q 4		
A)	(i) declaration of variable ½ marks (ii) writing calculation part correctly 1 marks (iii) Displaying output ½ marks.	½ +1 +1/2 = 2
B)	(i) Using tabs properly ½ marks (ii) using newline properly ½ marks (iii) using single cout properly 1 marks.	½ + ½ + 1 =2
C)	For correct output of yard , foot and inches 1 marks each.	1+1+1=3

D)	(i) Writing correct logic for each condition **OR** For complete correct program -3 marks	3
Q5		
A)	A compiler translates the corrected program text into object or assembly instruction text understood by the computer. This process of translation is called code generation. 1 marks A program cannot be executed before code generation.-1 marks	1+1
B)	When program formatting is done to make a program more readable, it is called pretty printing. For correct definition – 1 marks	1
C)	The code which can handle exceptional data errors and operational errors is called guard code. For correct definition- 1 marks	1
D)	1 marks for each use of documentation.	1* 2= 2
E)	Syntax errors are the errors that occur when rules of a programming language are violated. For Eg X_Y*Z ; //Result in syntax error as underscore is not an assignment operator, it should be = operator..	2
F)	(i) Effective and efficient (ii)User friendly. (iii)Self Documenting Code. (iv) Reliable (v) Portable (Any four) ½ marks for each characteristics	2
Q6		
A)	Output : 25 (1 marks for correct output)	1
B)	The break statement causes an exit from the smallest enclosing while, do-while, for or switch statement. **OR** The break statement causes an exit from the innermost loop or switch. ½ marks for partial correct answer and 1-marks for the above correct answer	1
C)	The exit statement causes an exit from the program it appears in. ½ marks for partial correct answer and 1-marks for the above correct answer	1

D)	For correct example of infinite loop – 1 marks	1
E)	For output : --n = 6 n = 6	1+1=2
F)	One marks for each correct difference between a while loop and do-while loop.	1*2=2
G)	One marks for each correct difference in operation of switch and if-else.	1*2=2
Q 7		
A)	Defining the problem of dangling else – 1 marks Specifying the default dangling- else matching -1/2 marks Writing example – ½ marks	1 + ½ + ½ = 2
B)	(i) initialization of variable correctly – ½ marks (ii) Writing while loop Condition correctly – ½ marks (iii) Displaying output correctly – ½ marks (iv) proper increment of variable – ½ marks	½ * 4 =2
C)	(i) using switch expression correctly – ½ marks (ii) writing case constants correctly – ½ marks (iii) using break correctly – ½ marks (iv) Using default correctly – ½ marks	½ *4 = 2
D)	(i) initialization of variable correctly – ½ marks (ii) Writing do-while loop – ½ marks (iii) incrementing loop variable – ½ marks (iii) Displaying output correctly – ½ marks	2
E)	(i) initialization of variable correctly – ½ marks (ii) Writing while loop Condition correctly – ½ marks (iii) writing logic in 3 lines ½ marks each – ½ *3 marks (iv) Displaying output correctly – ½ marks	3
F)	(i) initialization of variable correctly – ½ marks (ii) Writing for loop 1 correctly – ½ marks Writing for loop 2 correctly – 1 marks (iii) using newline at proper place - ½ marks (iv) Displaying output correctly – ½ marks	3