



INDIAN SCHOOL DARSAIT

FIRST TERM EXAMINATION – SAMPLE PAPER I

COMPUTER SCIENCE (083)



Class: XI

Max.Marks: 70

General Instructions:

(i) All questions are compulsory.

1. Answer the following questions based on Data Representation:

- a) Explain ASCII. 1
- b) Name the different data representation form. 1
- c) Convert the following: $(101010.10)_2 = (?)_8$ 2
- d) Find the eight bit 2's complement of $(-16)_{10}$. 2
- e) Evaluate the following: (i) $(FACE)_{16} \rightarrow (?)_8$ (ii) $(12)_{10} = (?)_2$ 4

2. Answer the following questions based on Computer Fundamental:

- a) What is the difference between data and information? 1
- b) What is an Operating system? Also mention its any two functions. 2
- c) With a neat diagram briefly explain the Functional units of a computer. 3
- d) Differentiate RAM and ROM. 2
- e) Explain any 2 input devices. 2

3. Answer the following questions based on Getting Started with C++ and Data Handling:

- a) Name the fundamental data types. 1
- b) What is a syntax error? 1
- c) How many bytes of memory are allocated for the following: i. "Beena\s " 1 ii. '\s' 1
- d) Point out the errors in the following program. Also rewrite the corrected code. 2

```
#include<istream.h>
Void main( )
{
int a, b
cout<<"Enter 2 numbers";
cin>>a>>b;
cout<<" The reverse of numbers are:"<<b,a;
```
- e) Differentiate between single line and multi line comments. 2
- f) Define the following terms with suitable examples in C++: 3
i) Tokens ii) Punctuators iii) Constants

4. Answer the following questions based on Operators and Expressions:

- a) Write the corresponding C++ expressions for the following mathematical expressions: 1
i. $V = 3.14r^2h$ ii. $\sqrt{p^3 + q^3 + r^3}$
- b) Evaluate the following expressions: 1
i. $a + b > c \ \&\& \ c + d < a - b$, if $a = 1, b = 2, c = 3$ and $d = 0$?
ii. $a - c == ! (b + d)$, if $a = 4, b = 3, c = 1, d = 5$?
- c) Construct logical expressions to represent the following conditions: 1
i. To check that a character variable *ch* is an uppercase alphabet.
- d) Differentiate between an assignment statement and a relational statement with suitable examples. 2

- e) What will be the output of the following program (Assume the header files are included): 2
- ```
void main(){
int a=12;
cout<< a- - <<" "<< a- -<<" "<<a- -<<endl;
cout<<- -a <<" "<<- -a<<" "<<- -a<<endl;}
```
- f) How the unary operator, binary operator and ternary operator different. Explain with examples of each in C++ 3

**5. Answer the following questions based on Flow of Control:**

- a) What is the difference between a while loop and a do-while loop. 1
- b) Give the output of the following program (Assume header files are included): 2
- ```
void main()
{ int a=1, b=5, c=4;
while(a<=3)
{
c+=b;
b*=4;
cout<< c<<" ,"<< b <<endl;
a++; }}
```
- c) Replace the *while loop* given below by *for loop*: 2
- ```
int c=1, n, p=1;
cin>>n;
while(c<=n){
p= p+c;
c++;}
cout<<p<<endl;
```
- d) Write a C++ program to find the factorial of a number inputted by the user. 2
- e) Write a menu driven program in C++ to do the basic arithmetic operations: 3
1. Addition
  2. Subtraction
  3. Product
  4. Division
  5. Exit

**6. Answer the following questions based on Flow of Control and Arrays:**

- a) Write a C++ program to input an integer and display the reversed number. 2
- b) What is the number of elements and size of array (i) **int A[10][5]** (ii) **char name[10]** 2
- c) Write a program to accept a 1D array of size N and calculate the sum of all elements . 3
- d) Write a program to accept an 1d array of size M and display maximum number in it. 3

**7. Answer the following questions based on Arrays:**

- a) Define an array. 1
- b) Find out the output for the following program snippet: 2
- ```
void main( )
{ int a[5]= { 15,100,115,20,25};
inti, j,k=1,m;
i = ++a[1] ;
j= a[2]++;
m= a[i++];
cout<<i<<j<<m<<k;}
```
- c) Write a C++ program to accept an matrix of size MxN, and display the sum of all elements those are divisible by 8. 3
- d) Write a C++ program to accept an array of size MxN and find the transpose of the matrix. 4