

Summer Holiday Home work
Session 2018-2019
Class: XII A
Subject: Computer Science with C++

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Unit I : PROGRAMING IN C++

Chapter 1 : C++ Revision Tour

1. What is mean by token? Which tokens are available in C++ ?
2. List four built in data types available in C++.
3. What is an identifier? List the rules of naming identifiers in C++.
4. What is meant by a floating constant in C++? How many ways can a floating constant be represented into ?
5. Explain the difference between (i) 0, '0', '\0' and "0" (ii) 33L and 33.
6. What is a reference variable? How is it defined in C++? What is its use?
7. What is the purpose of comments and indentation in a program?
8. Name the header files to which following built-in functions belong to :
(i) strcpy() (ii) gets() (iii) strcmp() (iv) getc()
(v) write() (vi) arc() (vii) open() (viii) strlen()
(ix) get() (x) abs() (xi) strcat() (xii) isalnum()
9. What is the principal reason for : (i) passing arguments by value ? (ii) passing arguments by reference ?
10. What is the difference between the global and local variable?
11. What do you mean by function prototyping? Write down the advantages of function prototypes in C++.
12. Write a C++ program to read a line of text from the keyboard and display the following information on the screen :
(i) Number of words (ii) Number of characters
13. Write a program to find the LCM and GCD of two numbers.
14. Write a program to sum a sequence $1 + 1/1! + 1/2! + 1/3! + \dots$
15. Write a program to show the greatest number from the given three numbers.

Chapter 2 : OOP Concepts

1. Explain the transitive nature of inheritance.
2. Illustrate the concept of inheritance with the help of an example.
3. Define the terms : (i) encapsulation (ii) abstraction (iii) polymorphism (iv) data hiding
4. How is data hiding implemented in C++ ?
5. What is abstract class ? What is concrete class ?
6. Write two major differences between Object Oriented Programming and Procedural Programming.
7. What is an object ? What is a class ? How is an object difference from a class ?
8. What is Object Oriented Programming paradigm ?
9. Name the four basic concepts of OOPs.
10. How is polymorphism implemented in C++ ?

Chapter 2 : Constructor and Destructor

1. What do you understand by constructor and destructor functions used in classes ? How are these functions different from other member functions ? 2
2. What do you understand by default constructor and copy constructor functions used in classes? How are these functions different from normal constructors ?
3. Given the following C++ code, answer the questions (i) & (ii). 2

```
class TestMeOut
{
public :
~TestMeOut() // Function 1
{ cout << "Leaving the examination hall " << endl; }
TestMeOut() // Function 2
{ cout << "Appearing for examination " << endl; }
void MyWork() // Function 3
{ cout << "Attempting Questions " << endl; }
};
```

(i) In Object Oriented Programming, what is Function 1 referred as and when does it get invoked / called ?

(ii) In Object Oriented Programming, what is Function 2 referred as and when does it get invoked / called ?

Chap 4 : Classes and Objects

1. Reusability of classes is one of the major properties of OOP. How is it implemented in C++?
2. Answer the questions (i) and (ii) after going through the following class.

```
class Basketball
{
    int Time;
public:
    Basketball() //Function 1
    {
        Time = 0;
        cout<<"Match commences "<<endl;
    }
    void Details() //Function 2
    { cout<<"Inter Section Basketball Match"<<endl; }
    Basketball(int Duration) //Function 3
    {
        Time = Duration;
        cout<<"Another match begins now"<<endl; }
    Basketball(Basketball &M) //Function 4
    {
        Time = M.Duration;
        Cout<<"Like Previous Match"<<endl; }
};
```

- (i) Which category of constructor – Function 4 belongs to and what is the purpose of using it?
- (ii) Write statements that would call the member Functions 1 and 3.

3. Consider the following declarations and answer the questions given below:

```
class Car
{
    char Model[10];
    char Date_of_purchase[10];
```

```

        char Company[20];
        public:
        Car();
        void entercarddetail();
        void showcarddetail();
};

class Accessories : private Car
{
    protected:
    char stereo_tape[30];
    char sheet_cover[20];
    public:
    float Price;
    Accessories();
    void enteraccessoriesdetails();
    void showaccessoriesdetails();
};

class Dealer : public Accessories
{
    int No_of_dealers;
    char dealers_name[20];
    int No_of_products;
    public:
    Dealer();
    void enterdealerdetails();
    void showdealerdetails();
};

```

- (i) Name the type of Inheritance depicted in the above example.
- (ii) How many bytes will be required by an object of class Accessories?
- (iii) Write names of all the members which are accessible from the objects of class Dealer.
- (iv) Write names of all data members accessible from member functions of class Dealer.

4. Answer the questions i to iv based on the following code:

```

class WORLD
{
    int H;
    protected :
    int S;
    public :
    void INPUT(int);
    void OUTPUT();
};

class COUNTRY : private WORLD
{
    int T;
    protected :
    int U;
};

```

```

public :
    void INDATA(int, int)
    void OUTDATA();
};
class STATE : public COUNTRY
{
    int M;
    public :
    void DISPLAY (void);
};

```

- (i) Name the base class and derived class of the class COUNTRY.
- (ii) Name the data member(s) that can be accessed from function DISPLAY().
- (iii) Name the member function(s), which can be accessed from the objects of class STATE.
- (iv) Is the member function OUTPUT() accessible by the objects of the class COUNTRY ?

5. Define a class to represent a book in a library include the following members :

Data members :

Bookno, Book name, Author, Publisher, Price, No of copies, No of copies issued

Member function :

1. To assign an initial value
2. To assign a book after checking for its availability
3. To return a book
4. To display book information

6. Declare a class to represent a bank account of 10 customers with the following data members :

Name of the Depositors, A/c No, Type of A/c (S for saving, C for current), Balance amount

The class also contains member functions to do the following :

1. To initialize the data members.
2. To deposit the money.
3. To withdraw money after checking the balance (min balance is 1000)
4. To display the data members.

7. Define a class of student with the following specifications :

Private members of class student

Admno	integer
Sname	20 characters
Eng, math, science	float
Total	float

Ctotal(): A function to calculate eng + math + science with float return type Public member functions of class student

Takedata(): A function to accept values for admno, sname, eng, math, science and invoke ctotal() to calculate total, showdata() function to display all the data members on the screen.

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