(b) Which keywords are used to perform the following functions in C++ : 2

(i) Exit from the current iteration of loop

(ii) Exit from the program

(c) Write a function called **largestNum( )** that finds the largest number from an array of 10 integers. 6

**8.** (a) Write logical expressions to represent each of the following conditions : 4

(i) **score** is greater than 60 but less than or equal to 70

(ii) **ch** is either lowercase or uppercase letter 'y'

(iii) **n** is an odd number between 0 and 9

(iv ) **x** is a vowel

(b) Why is **iostream** file required in a C++ program ? Give the syntax for the usage of this file in a C++ program. 2

(c) Write a C++ function to check whether given number is an Armstrong number. An Armstrong number is a number the sum of cubes of whose digits is equal to the number itself.

(For example, 135 is an Armstrong number as $135 = 1^3+3^3+5^3$) 4



6/12/17 (Evening)

[This question paper contains 8 printed pages]

**Your Roll No.** : .....

**Sl. No. of Q. Paper** : **7284**

Unique Paper Code : 32345102

Name of the Course : **Computer Science : Generic Elective for Honours**

Name/Title of the Paper: (G) Introduction to Programming

Semester : I

***Time : 3 Hours*** ***Maximum Marks : 75***

**Instructions for Candidates :**

(a) Write your Roll No. on the top immediately on receipt of this question paper.

(b) Question **No. 1** is compulsory.

(c) Attempt any **FIVE** questions out of **Q2** to **Q8**.

(d) Parts of a question must be answered together.

(Note: Please ignore any differences in font used for single and double quotes in the Question paper)

P.T.O.

**1.** (a) What would the following expressions evaluate to : 5

(i) 4 + 5 * 6 + 2

(ii) (21 == 22) ? 5 : 6

(iii) 5 + 7 % 2

(iv) 12 % 3

(v) 1 & 0

(b) What would be the output of the following C++ code snippets : 2×3=6

(i)
```
for(int i=1; i<=20; i++)
    if (i % 2==0) cout << i << " ";
```

(ii)
```
for (int i=1; ;)
    {
     cout << i << " ";
     if (i == 64)
        break;
     i*=2;
    }
```

(iii)
```
char ch = 'e' ;
switch(ch)
{
case 'a' :
```





**5.** (a) Suggest an appropriate data type for the following : 4

(i) Circumference of a circle

(ii) The number of wheels in a vehicle

(iii) Designation of a person

(iv) PAN number like AAHPG4523G of a person

(b) Declare a structure containing cricketer's Id Number, his age, number of test matches that he has played and the average runs that he has scored in each test match. Write a program that accepts as input the information of one such cricketer and displays it. 6

**6.** (a) Find out the error in the following C++ statements : 4

(i) char ch = "temp" ;

(ii) int line count =2 ;

(iii) cout << "a =" << a << "b ="b ;

(iv) int b == 3;

(b) Write a function in C++ that takes a number as input and returns the sum of its digits. 6

**7.** (a) Give one example of each of the single line and multiple line Comments. 2

```
int a, b ;
a = -3 - - 3 ;
b = ++a + a++ ;
cout << " a = " << a << " b =" << b ;
}
```

(b) Write a while loop to display the numbers divisible by 3 between 100 and 1000. 4

(c) Write a C++ function that takes an input parameter x and returns its cube. 4

**4.** (a) Declare a class Cuboid in C++ having three data members: length, width and height. 2

(i) Define a default constructor for this class. 1

(ii) Create an object of this class and display its volume. 2

(b) Write a C++ function sum Series that accepts two inputs x and n, and finds the sum of first n terms of series : 5

$$1-\frac{x}{3}+\frac{x}{5}-\frac{x}{7}+.....$$





```
case 'e' :
case 'i' :
case 'o' :
case 'u' : cout << " Vowel " << end1;
default: cout << " Consonant " << end1;
```

(c) Rewrite the following code segments with the help of a do-while loop : 2+2=4

(i)
```
for (int i=1; i <=20; ++i)
   cout << "\n" << i;
```

(ii)
```
char ch= 'y' ;
int i=1;
while (ch == 'y')
{
      cout << i*i*i ;
      cout << "Pls Enter y if you
      wish to continue." ;
      i++;
      cin >> ch ;
}
```

(d) Write a C++ program to read twenty-five numbers into an array and display the number of positive and number of negative integers. 5

(e) Write a C++ program to read the marks obtained by a student in five different subjects, find out the aggregate marks and percentage marks obtained by the student. Assume that the maximum marks that can be obtained by a student in each subject is 100. 5

**2.** (a) What would be the output of the following C++ programs ? 2+3=5

(i)
```
int main( )
{
 int num[26], temp ;
 num[0] = 100 ; num[25] = 200 ;
 temp = num [25]; num [25] = num [0];
 num [0] = temp;
cout << num[0] << " "<< num[25] ;
}
```

(ii)
```
int main( )
{
 int i = 45, c;
 c = check (i);
 cout << c ;
}
```





```
check (int ch)
{
if (ch>= 45)
    return(100) ;
 else
    return(100 * 100) ;
}
```

(b) Write a C++ Program to display the following pattern on the output screen. The number of lines should be taken as an input from the user. 5

%%%% @

%%% @ @

%% @ @ @

% @ @ @ @

@ @ @ @ @

**3.** (a) What would be the output of the following C++ program ? 2

```
int main( )
{
```