

Class 11 Term1-2016
Sample Paper 1

1. a) Name the header file for the following built-in identifiers: [3]
- | | | |
|------------|---------------|---------------|
| i) log10() | ii) isalnum() | iii) gets() |
| iv) endl | v) sqrt() | vi) toupper() |

- b) Find syntax error(s), if any and rewrite the complete the program after making the necessary changes (underline the errors): [3]

```
#include iostream.h
void ()
{
    int n, sum = 0;
    cin > n;
    for (int c == 2; c <= 2*n; c+=2)
        sum ++ c;
    cout << 'Sum=' << sum << endl;
}
```

2. a) Give the output of the following program: [3]

```
#include<iostream.h>
void myfn(int& x, int y, int& z)
{
    x *= y += z;
    z += x += y;
    cout << x << ',' << y << ',' << z << endl;
}
void main()
{
    int a = 7, b = 9;
    myfn(a, b, a);
    myfn(b, a, a);
}
```

- b) Give the output of the following program: [3]

```
#include<iostream.h>
void main()
{
    int s = 0, sum = 0;
    int x =1, p = 1;
    while (x <= 5)
    {
        p *= 2;
        s += p;
        sum += s;
        cout << p << ',' << s << ',' << sum<< endl;
        x++;
    }
}
```

- c) Give the output of the following program segment: [2]

```
int a=35;
cout << ++a << ',' << a++ << ',' << a++ << endl;
cout << a-- << ',' << --a << ',' << --a << endl;
```

3. a) 2. Identify any **four** operators that work from **right** to **left**: [2]

+, =, >=, *=, /, %=, !=, &&, +=, <, /=

- b) i) Name the keywords which are optional in **switch-case**. [1]
ii) Name **two** operators that work as unary and as well as binary operator. [1]
iii) What is an entry controlled loop? Name one entry controlled loop of C++. [2]

4. a) In the program segment given below, replace **switch-case** by **if-else-if**: [2]

```
char cho;
cout << "Select your PLAYER" << endl;
cout << "1. Sachin Tendulkar" << endl;
cout << "2. Rahul Dravid" << endl;
cout << "3. MS Dhoni" << endl;
cout << "4. Suresh Raina" << endl;
cout << "5. Virat Kohli" << endl;
cout << "Cast your vote [1-5]? "; cin >> cho;
switch (cho)
{
    case '1': cout << "U voted 4 Sachin Tendulkar "; break;
    case '2': cout << "U voted 4 Rahul Dravid "; break;
    case '3': cout << "U voted 4 MS Dhoni "; break;
    case '4': cout << "U voted 4 Suresh Raina "; break;
    case '5': cout << "U voted 4 Virat Kohli ";
}
```

- b) In the program segment given below, replace **if-else** by **switch-case** and ternary operator: [1]

```
int x, y, lo;
cout << "Input two integer values? "; cin >> x >> y;
if (x <= y)
    lo = x;
else
    lo = y;
cout << "Minimum Value = " << lo << endl;
```

- c) In the program segment given below, replace **if-else** by **switch-case** and conditional operator: [1]

```
int year;
cout << "Input Year? ";
cin >> year;
if (year % 4 == 0 && year % 100 != 0)
    cout << year << " Leap Year";
else
    cout << year << " Not Leap Year";
```

5. a) Name the type modifiers of C++. Name the type modifiers that can be used with data type **float** and **double**. [2]

b) Differences between double and float [2]

```
c) #include<iostream.h>
void main()
{
    double a, b;
    cout<<"Input two values? "; cin>>a>>b;
    double am=(a + b)/2, hm=2*a*b/(a + b);
    cout<<"AM="<<am<<endl;
    cout<<"HM="<<hm<<endl;
}
```

- i) Name two keywords. ii) Name two strings.
iii) Name two identifiers. iv) Name two operators.

d) What is a comment? With suitable examples show **two** ways of writing comment. [2]

e) What is type casting? With suitable examples show **two** ways of using type casting. [2]

6. Write complete C++ program for the following:

a) Input a character from a keyboard. Display the inputted character and character type (Uppercase, Lowercase, Digit and Special character) on the screen. Do not use any built-in functions from the header file <ctype.h>. [3]

b) Input name of a student (string of 20 characters) and Computer Science marks out 100. Calculate grade (Grade is to be stored in a character type variable) on the basis of the table given below:

Marks	Grade
Greater than equal to 95	A
Greater than equal to 85 and less than 95	B
Greater than equal to 70 and less than 85	C
Greater than equal to 60 and less than 70	D
Greater than equal to 50 and less than 60	E
Greater than equal to 40 and less than 50	F
Less than 40	U
Greater than 100 or less than 0 (zero)	Error

Display inputted name and marks and calculated grade. If inputted marks is less than 0 (zero) or more than 100 then display an error message "Error". [4]

c) Input an integer value n and find the sum of the following series: [3]

$$(1^2) + (1^2 + 3^2) + (1^2 + 3^2 + 5^2) + (1^2 + 3^2 + 5^2 + 7^2) + \dots + (1^2 + 3^2 + 5^2 + \dots + (2n-1)^2)$$

Display the calculated sum on the screen.

d) Write a Program to input an integer value n and a floating point (**double**) value x and calculate the sum of the following series (do not use built-in function pow()): [3]

$$1 + \frac{x^2}{1!} + \frac{x^4}{3!} + \frac{x^6}{5!} + \frac{x^8}{7!} + \dots + \frac{x^{2n}}{(2n-1)!}$$

Display the calculated sum on the screen.

- Q7 Differentiate the following with proper example of each [3x4=12]
- Entry Level & Exit Level Loop
 - Actual parameter and Formal parameter.
 - Value parameter and Reference parameter.
 - Built-in Identifier & Keyword

Q8 When is a scope resolution operator necessary with a global variable? [1]

Q9 What is function prototype? Give an example. Is it mandatory to have function prototype for every user defined function? Justify your answer.

Q10 Write C++ function for the following: [3x4=12]

- To find the sum of odd digits and to find the sum of even digits of an integer passed as a parameter to the function. Display the two outputs on the screen. Return value of the function is **void**.
- To check whether an integer passed as a parameter to a function is either Armstrong or Not Armstrong. Name of the function is `armstrong()`. Return value of the function is **int**. If the integer is a Armstrong Number then return 1 else return 0.
- To check whether an integer passed as a parameter to a function is either Palindrome or Not Palindrome. Name of the function is `ispalin()`. Return value of the function is **void**. If the integer is a Palindrome Number then display "Palindrome Number", Otherwise display "Not Palindrome Number"
- To count the no of digit it and display reverse of the of number inputted by user as parameter. Return type of function is void. It will display Original No, No of digits & Reverse Number.

**Class 11 Term1-2016
Sample Paper 2**

1. a) Name the header file for the following built-in identifiers: [3]
- | | | |
|--------------|-----------|----------------|
| i) tolower() | ii) tan() | iii) isdigit() |
| iv) cin | v) labs() | vi) M_PI |

- b) Find syntax error(s), if any and rewrite the complete the program after making the necessary changes (underline the errors): [3]

```
#include<stream.h>
void main[]
{
    int sum = 0;
    cin >> n;
    for (int x = 1; x <= n; 1 += x)
        sum += 2x - 1;
    cout << SUM << endl;
}
```

- c) Give the output of the following program: [3]

```
int g=2;
void func(int m, int &n, int &p)
{
    g*=m+n;
    p+=g+n+m;
    n+=m+n+p;
    cout<<m<<','<<n<<','<<p<<endl;
}
void main()
{
    int g=3, l=2;
    func(::g, g, l);
    func(l, ::g, g);
    cout<<::g<<','<<g<<','<<l<<endl;
}
```

- d) Give the output of the following program: [2]

```
#include<iostream.h>
void main()
{
    int s1 = 0, s2 = 0;
    for (int x = 1; x <= 5; x++)
    {
        s1 += x * x * x;
        s2 += s1;
        cout << s1 << ',' << s2 << endl;
    }
}
```

2. a) Replace **while** loop given below by **for** loop: [2]
- ```
int n, p = 1;
cout << "Input an integer? "; cin >> n;
int c = 1;
while (c <= n)
 p *= c++;
cout << p << endl;
```
- What will be the output of the program segment when inputted the value of n is
- i) -7                      ii) 5
- b) Replace nested **for** loops (Outer and Inner loops) given below by single **while** loop: [2]
- ```
int n, sum=0;
cout<<"Input an integer (n)? "; cin>>n;
for (int k=2; k<=2*n; k+=2)                      //Outer Loop
{
    int s=0;
    for (int j=1; j<=k; j++)                      //Inner Loop
        s+=j*j;
    sum+=s;
}
cout<<sum;
```
3. a) Name any **four** rules for naming a C++ identifier. [2]
- b) Identify **four** incorrect identifier names and explain why, from the list given below: [2]
long, AD_No, INT, comp-sc, CAL29, 2ndfloor, price, cell#
- c) Mention **two** differences between data type **float** and data type **double**. [2]
4. a) i) Name any **two** unary operators other + and -. [1]
ii) Name any **two** operators that works from right to left other than =. [1]
iii) Name the **two** operators that are used to combine two or more logical expression. [1]
iv) Name any **two** operators that works from left to right other than >> and <<. [1]
- b) Write C++ logical expression for the following (do not use C++ built-in functions):
- i) To check that a character variable `mychar` contains only digit [1]
- ii) To check that an integer variable `number` is odd but not divisible by 5 [1]
- iii) To check that an integer variable `marks` contains a value between 0 and 100 [1]
- iv) To check that a character variable `alpha` contains uppercase vowel [1]
5. Define Local variable. Give a suitable example of a Local variable. Mention any **two(2)** characteristics of a Local variable. [2]
- 6 a) What is a compiler directive? Name any two compiler directives. [2]
- b) What is the use of keyword **const** ? Explain with a suitable example. [2]
- 7 Differentiate between function prototype and function definition with a suitable example. [2]
- 8 Why do we need **return** statement in a C++ function? [2]

Q9 Differentiate the following with proper example of each

[3x3=9]

- a) Syntax Error & Run Time Error
- b) islower() and tolower()
- c) Global variable and Local variable.

10. Write complete C++ program for the following:

- a) Local calls are charged according to the table given below: [4]

Local Calls	Charges for Local Calls
1 – 100	No charge
101 – 250	Rs. 3.00 per call + Rs. 10.00 as surcharge
251 – 500	Rs. 4.00 per call + Rs. 25.00 as surcharge
501 and above	Rs. 5.00 per call + Rs. 75.00 as surcharge

Monthly Phone Rent is Rs. 250, for International Calls charge is Rs. 50 per call. Total Amount Due is calculated as Monthly Phone Rent + Charges for Local calls + Charges for International calls. Input number of local calls (integer value) and number of international calls (integer value) is made in a month. Calculate total amount due and display the result on the screen.

- b) Input three coefficient of a quadratic equation and calculate discriminant. If discriminant is zero then display a message "Real and Equal Roots"; calculate two roots and display the two roots on the screen. If discriminant is positive then display a message "Real and Distinct Roots"; calculate two roots and display the two roots on the screen. If discriminant is negative then display a message "Complex Roots" and do not calculate two roots. [4]

- c) Input an integer value n and a floating point value x and calculate the sum of the following series (do not use built-in function pow()): [3]

$$1 + \frac{x}{2!} + \frac{x^2}{4!} + \frac{x^3}{6!} + \frac{x^4}{8!} + \dots + \frac{x^n}{(2n)!}$$

Q10 Write C++ function for the following:

- a) Find the sum of the digits and the product of digits of an integer passed as a parameter to a function. Display the sum and product inside the function. Return value of the function is **void**. [4]

- b) Find the sum of even digit and product of odd digit of an integer passed to function. Display the sum and product inside the function. Return value of the function is **void**. [4]
(for example n=32465 so sum will be 2+4+6=12 and product will be 3x5=15)

- c) Find the number passed as parameter is Prime number or composite. If the integer is a Prime number then display "Prime" otherwise display "Composite". [3]