INTERNATIONAL INDIAN SCHOOL-DAMMAM
FIRST TERM EXAM 2014
COMPUTER SCIENCE (083)
CLASS: XI
SET-A
MAX. MARKS: 70
TIME: 3 HRS

Note: i. All questions are compulsory
ii. Use programming language C++

1. (a) Name any two first generation computers.  
(b) Give 2 examples of General Purpose application software.  
(c) How many Mega bytes are there in 1 Zetta Byte  
(d) What is the function of memory? What are its measuring units?  
(e) What is the difference between a microprocessor and a micro computer?  
(f) What is open source software? Give 2 examples.  
(g) What is scheduling? What are the two scheduling techniques?  
(h) What is the difference between static RAM and Dynamic RAM  
(i) What is a port? Define Fire wire port.  
(j) Convert
   1. \((2DC4)_{16}\) to \((\_\_\_)_8\)
   2. \((100101.1011)_2\) to \((\_\_\_)_{10}\)
   3. \((145.03)_8\) to \((\_\_\_)_{10}\)
   4. \((423)_{10}\) to \((\_\_\_)_{16}\)
   5. \((63.362)_{8}\) to \((\_\_\_)_{2}\)

2. (a) What are identifiers in C++? What is the identifier forming rule in C++?  
(b) What are non graphic characters? How are non graphic characters represented in C++?  
(c) In how many ways can a variable declared in C++? Give example.  
(d) What do you mean by type casting? What is type cast operator?  
(e) Differentiate between while loop and do while loop with example.  

3. (a) Write an equivalent C++ expression
i) \[-\frac{b - \sqrt{b^2 - 4ac}}{2a} \]

ii) \[(a+b)^2 / (c+d)^4\]

(b) Construct logical expressions to represent the following conditions:

i) Mark is greater than or equal to 80 but less than 90

ii) Ch is an uppercase letter

(c) Evaluate the following expressions

i) \[a=10, \ b=5, \ c=11 \]
   \[(a>=b) \ || \ (c==b) \ && \ (c<a)\]

ii) \[a, \ b, \ c \ are \ integers \ and \ d \ is \ a \ floating \ point \ number. \ The \ value \ of \ a =8, \ b=4 \ and \ d=2.5. \ What \ is \ the \ value \ of \ c?\]
   \[c = d + a + b \ \% \ a\]

4. How many times the following loop will be executed?

(a) int s=10, k=1;
   do
   {
   s += k;
   k--;
   cout<< s;
   } while(k);

(b) Rewrite the following code using if else statement

int a;
 cin>>a;
 switch(a)
 { 
 case 1 : cout<<"Sunday";
 break;
 case 2:
 case 3:
 case 4:
 case 5:
 case 6 : cout<<" Week day";
 break;
 case 7 : cout<<"Weekend";
 default : cout<<"Wrong entry";
 }

(c) Rewrite using while loop

int sum=0;
for (int f = 1; f <= 10; f++)
    sum += f;

5. Identify the syntax errors in the following program segments, underline the corrections and write the correct form.

(a) include<iostream.h>
void main()
{
    int i, a;
    cin >> a;
    if (a >= 2 AND a <= 10)
        cout << "Within range";
    else if
        cout << "Not within range";
}

(b) #include<iostream.h>
void main()
float a;
const int b;
b = 10;
a = b % 3.1;
cout << "a = " a;
}

6. Give the output:

(a) #include<iostream.h>
void main()
{
    int a = 10, b = 12;
    for (int i = 1; i <= 5; i++)
    {
        cout << "n[1]" << a++ << " n[2]" << ++a << " n[3]" << b++;
    }
}

(b) #include<iostream.h>
void main()
{
    int y = 1, i = 5;
    while (i)
    {
        y *= i--;
    }
7. Write a C++ program for the following.

(a) To input one character and display whether it is uppercase or lowercase or digit or special character.

(b) To count the number of digits in a given number
    (For eg. If the number is 1346, number of digits = 4)

(c) To find the largest of 3 numbers using conditional operators.

(d) Display the sum of negative number, sum of positive even number, sum of positive odd numbers from a list of numbers entered by the user. The list terminates when the number entered is zero.

(e) Display a menu regarding Rectangle Operations (Area, Perimeter and Diagonal of a rectangle) and perform according to users response.

(f) Check a given number is Prime or not.