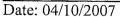
THE OPEN UNIVERSITY OF SRI LANKA

B.Sc DEGREE PROGRAM: LEVEL 05

OPEN BOOK TEST 2007/2008

CSU 3279 - OBJECT ORIENTED PROGRAMMING

DURATION: One and Half hours



Time: 4.00 pm - 5.30 pm

Answer All Questions.

Q1

- i). What data type would you use to represent the following data items?
 - (a) Avogadro's Number (6.022×10^{23}) .
 - (b) Gender of a person.
 - (c) weight of a mosquito.
 - (d) Number of professors in an University.
 - (e) The average temperature of a city during a month.
- ii). If a=2, b=4, c=6, and d=10, what will be the values of the following expressions?
 - (a). c == a+b.
 - (b) (a+b+c+d) >= 'a'.
 - (c) a < b & & c < d.
 - (d) !(a++< d).
 - (e) a>c || b<d.
- iii). Briefly explain what will happen during the execution of each of the following expressions.
 - (a) $a = (b \le (c+d)) ? i:j;$
 - (b) p = sizeof(--i).
 - (c) x = b + = c.
 - (d) y = b++.
 - (e) m = getchar()! = eof.
- iv). Find all the errors of following C++ program segments.
 - (a) # program <iostream.h>
 {
 char a;
 begin
 a = A;
 cout << " The character is" << a;
 end;
 }</pre>

```
(b) # include <iostream.h>
     void main ( );
     {
        int m, s;
        cout>> "The summation of 1 to 10 numbers are"
        cout>> "\n";
        s = m = 0;
        while (m<=10) do
        {
            s = s + m;
            {
              cout<< s;
        }
}</pre>
```

Q2.

- (i). Write the C++ codes for the following parts.
 - (a). Define A as type char and B as type integer. Initialize A to "Hello" and B to 25.
 - (b) Define two char pointer variables X and Y. Initialize Y to the address of X.
 - (c) Define two char array variables SUBJECT and CLASS. Initialize SUBJECT to CSU3279 and CLASS to Block8.
 - (d) Define two string variables S1 and S2 and initialize them to "Hello" and "Dear Friends" respectively.
 - (e) Assign the concatenated string S1 and S2 into S1.
 - (f) Compare strings S1 and S2.
 - (g) Find the length of the string S1.
 - (h) Copy contents of S1 into another string S3.
- (ii) A thermometer reads temperature values of a human body in degrees Celsius. If you were required to convert those values in Celsius in to degrees of Fahrenheit how would you do it using a C++ program? You may assume that the degrees of Celsius could be read from the user. (Help: Fahrenheit = 32 + 9/5 * Celsius).
- (iii) Write C++ codes using 'while' loop to find the following summation.

$$S = 1 + 3 + 3^2 + 3^3 + ... + 3^{10}$$

- (i) State whether the following statements are **True** or **False**.
 - (a) A pointer variable can hold the address of another variable.
 - (b) 'strcmp' returns 0 if the strings are same.
 - (c) 'do...while' loop and 'while' loop are work similarly when the execution time.
 - (d) 'brake' statement and 'continue' statement are same in operation.
 - (e) Constants do not have data types.
- (ii) What would be the output of following two program segments.

```
(a) # include < iostream.h>
Void main()
{
    int X,Y;
    X = 10;
    Y = X--;
    Cout << "X = " << X;
    Cout << "Y = " << Y;
}
```

```
(b) # include < iostream.h>
    Void main()
    {
        int n;
        cout << "Enter the starting number";
        cin >> n;
        while (n <= 10)
        {
            Cout << n << ",";
            ++n;
        }
        Cout<< "END";
    }
    unû</pre>
```

(iii) During a game, players have to press a button among numbers 0 – 9. If he/she has chosen 1, 2 or 3 a message "go forward" should be displayed. Otherwise the message "try again" will be displayed. Write a C++ program for the above task.

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