BAHRIA UNIVERSITY³

ISLAMABAD CAMPUS
Department of Computer Science
MidTerm Examination
BSCS [B]
(Spring 2023 Semester)
Paper Type: Descriptive

Course:	**Computer Programming Lab**	Date: 6-04-2023
Course Code:	CSC-113	Session: I
Faculty's Name:	**Ms. Rabail Zahid**	Max Marks: 35
Time Allowed:	90 minutes	Total Pages: 7

STUDENT'S NAME (IN FULL): _____

REG NO: _____ ENROLMENT No_____CLASS_____

1. Write your full name and other particulars clearly and legibly. Write on both sides of the papers. No page to be torn and taken out of examination venue.
2. Read the instructions on the question paper and answer book carefully and understand.
3. Paper will commence at the exact time. Be punctual and be inside the examination hall at least 15 minutes before paper start time.
4. Be seated as per seating plan depicted in the Examination Admit Slip.
5. Students after the start of paper will not be permitted to go to washrooms/toilets or any other place outside the examination venue.

N. B: read carefully the instructions given overleaf

HALL NO: _____ INVIGILATOR'S SIGN: _____

INVIGILATOR'S NAME: _____

Instructions about the Paper

   I.   There are total **SIX** questions. All questions are compulsory.
  II.   The paper is closed book.
 III.   The students are not allowed any helping material (books, tables, formulas, etc).
  IV.   Use blue, black or blue-black ink only. Do NOT use lead pencil especially.
   V.   Do not cheat.
  VI.   **This is Answer Book. Solve the Paper on this Book only. Minus 5 Marks if Extra Sheet is Used.**

CLO	Question#	Total Marks	Obtained Marks	CLO	Question#	Total Marks	Obtained Marks
1	Question-1	4		2	Question-4	3	
2	Question-2	12		3	Question-5	5	
2	Question-3	4		3	Question-6	7	
	Total / 35				Signatures		

Question # 1 (4 Marks)

Provide the answers to the given short questions. Explain the concept with suitable example where required.

   a. How does the "continue" statement differ from the "break" statement in C++? **(2*2 marks)**

   b. What is a switch statement in C++, and how does it differ from an if statement?

Question # 2 (12 Marks)

   a. What is the output for the following code codes in the corresponding output column. If there are any errors, then mention them clearly. Assume that the header files are included in each code's snippet. **(6*2 marks)**

	C++ Code	Output
| 1 | ```cpp
int main()
{
    bool flag = sizeof(double);
    flag=false;
    if (flag==true)
    {
        cout << "exit" << endl;
    }
    else
    {
        cout << sizeof('11') << endl;
        cout << sizeof("AB1") << endl;
        cout << sizeof("#Hello") << endl;
    }
return 0;
}
``` | |
| 2 | ```cpp
int main()
{
    int x=1;
    while(x<10)
``` | |

```
        {
            if(x%2==2)
            {
                cout<<x<<"";
            }
            x=x+2;
        }
    return 0;
}
```

| 3 | ```
int main()
{
    int a=1, b=2, c=7, d=a;
    char ch1 = 'b';
    a = (a * c) *(ch1 + d);
    cout<<a;
return 0;

}
``` | |
| 4 | ```
int main()
{
    int a=1, b=3,c=5; a = 4 + (c =5);
    cout>>a<<b;
return 0;

}
``` | |
| 5 | ```
int main()
{
    int x = 5, y = 10;
    int z = ++x *  - -y;
    cout<<(z+y);
return 0;
}
``` | |
| 6 | ```
int main()
{
    int i, j, m, answer;
    m = 0;
    j = 4;
    while (m < 2)
    {
        for (i = 0; i < j; i++)
        {
            answer = i + m;
            cout << answer;

        }
        m = m + 1;
        cout << endl;}
return 0;
}
``` | |

Question # 3 (4 Marks)

a. Consider the following code segment   **(4 marks)**

	C++ Code	
| 1 | ```cpp
#include<iostream>
using namespace std;
int main()
{
   int num =1331 ;
   int result =0;
   while(num>0)
   {
     int dig =num%10;
     if(dig!=2)
     {
        result =result*20+dig;
     }
     num=num/10;
   }
   cout<<result;
return 0;
}
``` | What is printed when :<br><br>1. Num =30 _____<br><br>2. Num =124= _____<br><br>3. Num =1234_____<br><br>4. Num=1331_____ |

Question # 4 (3 Marks)

Write a C++ Program to convert Decimal to Binary number. Use FOR Loop for this program. **(3 marks)**

Question # 5 (5 Marks)

Write a program that prints the price to feed a pet according to the following rules: (6 marks)

1. A dog that belongs to category "A" costs $20.
2. A dog that belongs to category "B" costs $30.
3. A cat that belongs to category "A" costs $40.
4. A cat that belongs to category "B" costs $50.

A bird or reptile costs nothing. Any other animal generates an error message. The program should prompt the user for the appropriate information, using a code to determine the kind of animal (i.e., D or d represents a dog, C or c represents a cat, B or b represents a bird, R or r represents a reptile, and anything else represents some other kind of animal).

Hint: Using nested if else statement

Question # 6 (7 Marks)

Write a program that calculates the balance of a savings account at the end of a period of time. It should ask the user for the annual interest rate, the starting balance, and the number of months that have passed since the account was established. A loop should then iterate once for every month, performing the following:

1. Ask the user for the amount deposited into the account during the month. (Do not accept negative numbers.) This amount should be added to the balance.
2. Ask the user for the amount withdrawn from the account during the month. (Do not accept negative numbers.) This amount should be subtracted from the balance.
3. Calculate the monthly interest. The monthly interest rate is the annual interest rate divided by twelve. Multiply the monthly interest rate by the balance, and add the result to the balance.

After the last iteration, the program should display the ending balance, the total amount of deposits, the total amount of withdrawals, and the total interest earned. Use FOR Loop for this program.

Note: If a negative balance is calculated at any point, a message should be displayed indicating the account has been closed and the loop should terminate.

Best of Luck