



BAHRIA UNIVERSITY²

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	4	
2	Question-2	12		3	Question-5	5	
2	Question-3	4		3	Question-6	6	
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 the difference between a while loop and a do-while loop?

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	<pre>int main() { bool flag = sizeof(float); if (!flag) { cout << "exit" << endl; } else { cout << sizeof('11') << endl; cout << sizeof("AB") << endl; cout << sizeof("Hello") << endl; } return 0; }</pre>	
2	<pre>int main() { int x=1; while(x<0) {</pre>	

	<pre> if(x%2==2) { cout<<x<<""; } x=x+2; } return 0; } </pre>	
3	<pre> int main() { int a=1, b=2, c=7, d=a; char ch1 = 'b'; a = (a * c) *(ch1 + d); cout<<a; return 0; } </pre>	
4	<pre> int main() { int a=1, b=3,c=2; a = 3 + (c =5); cout>>a<<b; return 0; } </pre>	
5	<pre> int main() { int x = 5, y = 10; int z = x++ * y--; cout<<(z+y); return 0; } </pre>	
6	<pre> int main() { int i, j, m, answer; m = 0; j = 4; while (m < 3) { for (i = 0; i < j; i++) { answer = i * m; cout << answer; } m = m + 1; cout << endl;} return 0; } </pre>	

Question # 3 (4 Marks)

a. Consider the following code segment

(4 marks)

	C++ Code	
1	<pre>#include<iostream> using namespace std; int main() { int num = ?? ; int result =0; while(num>0) { int dig =num%10; if(dig!=3) { result =result*10+dig; } num=num/10; } cout<<result; return 0; }</pre>	<p>What is printed when :</p> <ol style="list-style-type: none"> 1. Num =30 _____ 2. Num =124= _____ 3. Num =1234_____ 4. Num=1331_____

Question # 4 (4 Marks)

Write down if/if-else statements for the following

(4 marks)

x, a, b, c are variables	
x is not less than 16	
x is between 25 and 45	
cout << (((x % 3) == 0) ? "factor of 3":"!factor of 3");	

$a = b \geq 25 ? c * 50 : d / 30;$	
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Question # 5 (5 Marks)

A bank in your town updates its customers' accounts at the end of each month. The bank offers two types of accounts: savings and checking. Every customer must maintain a minimum balance. If a customer's balance falls below the minimum balance, there is a service charge of \$10.00 for savings accounts and \$25.00 for checking accounts. If the balance at the end of the month is at least the minimum balance, the account receives interest as follows:

- a. Savings accounts receive 4% interest.
- b. Checking accounts with balances of up to \$5,000 more than the minimum balance receive 3% interest, otherwise, the interest is 5%.

Write a C++ program that prompts the user to enter account details and then display the updated balance according to above mentioned criteria. Assume that the minimum balance for the following output is \$200.

Example Input:

Enter Account Type: Savings

Enter the Account balance: \$100

Output: Updated Balance is: \$90

Question # 6 (6 Marks)

Write a C++ program that prompts the user to enter integers repeatedly until the user enters a prime number. Once the user enters a prime number, the program should stop taking input and display the sum and product of all the numbers entered by the user.

The program should perform the following steps:

1. Continuously prompt the user to enter an integer.
2. Keep track of the sum and product of all the numbers entered by the user.
3. Check if the entered number is a prime number.
4. If the entered number is a prime number, stop taking input from the user.
5. Display the sum and product of all the numbers entered by the user.

Note: A prime number is a whole number greater than 1 whose only factors are 1 and itself.

You are required to implement a C++ program that follows the above steps to take input from the user until a prime number is entered, and then displays the sum and product of all the numbers entered by the user. Good luck! Happy coding! Let me know if you need any further clarification.

Enrollment Number: _____

Best of Luck
