



BAHRIA UNIVERSITY

ISLAMABAD CAMPUS

Department of Computer Science

Final Examination

BSCS [A, B, C, D], BSIT [A, B]

(Fall 2022 Semester)

Paper Type: Descriptive

Course:	Computer Programming	Date: 23-02-2023
Course Code:	CSC-113	Session: I
Faculty's Name:	Dr. Arif ur Rahman/Mr. Burhan Abbasi/Ms. Rabail Zahid/Ms. Nabia Khalid/Mr. Abrar Ahmed	Max Marks: 50
Time Allowed:	150 minutes	Total Pages: 10

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 **SEVEN** 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	5		3	Question-5	10	
1	Question-2	10		2	Question-6	5	
1	Question-3	5		2	Question-7	10	
3	Question-4	5					
Total / 50				Signatures			

INSTRUCTIONS FOR STUDENTS

1. No student would be allowed to sit in the Examination venue without showing Examination Admit Slip to the invigilator. No student should allow anyone to impersonate him/her. This may result in serious consequences even to the extent of cancellation of registration from Bahria University.
2. Students prior entering the Examination venue should ensure that they are not in possession of written material of any sort. All such material is to be left outside the venue Examination. Any written material found possession of a student, whether that material is related or unrelated to the paper, will result in grade 'F' in the relevant paper.
3. Writing on palm, arm or anywhere on the candidate's body/clothing is considered enough proof of cheating, which will result in award of grade 'F' in the paper.
4. Any attempt to copy/take or give help in examination is an offence, punishable even to the extent of expulsion from the Institution.
5. Books and notes are not to be brought inside the examination hall except in case of open book exam.
6. Bring your own pen, pencils erasers, scales and calculators. Borrowing at the places of examination is not permitted. Special/programmable calculators (except where permitted), electronic notebooks, mobiles phones, PDAs and any other electronic accessories are prohibited at the examination venues.
7. All rough work is to be done on right side of the answer book, opposite the same question.
8. Additional sheets or graph sheet etc, if used, are to be properly tagged. Serial number of extra book(s) taken (if any) should be entered in the specified box on the main Answer book.
9. Do not ask for any help from the invigilators in solving questions. This may be taken as an act of academic dishonesty and dealt accordingly. You may seek invigilator's assistance regarding misprinting. How and what to write should not be asked. Any query related to the question paper is to be clarified by concerned faculty member within first thirty minutes of the paper only. The query is to be addressed to all the students loudly by the concerned faculty.
10. Possession of firearms, knives etc, inside and in the vicinity of Examination Hall is a punishable crime under the country's law.
11. Disrupting the Examination venue by shouting or by rowdy acts, will be considered as serious punishable act under the country's law.
12. You are required to be respectful and polite and polite towards the invigilation and admin staff. Show of temper, anger, misbehavior, misconduct or disrespectful utterances will be dealt with serious punishment.
13. Eatables, beverages and smoking is not permitted at Examination venue.

Certified that I have read and understood the instruction for compliance in the Examination hall/venue and I hereby undertake to abide by these in their true letter and spirit. I also declare on oath/affirm that I shall not challenge any penalty imposed on me by the Competent Authority for violating any of the instruction.

Signature of the Student: _____

- 1) Provide the answers to the given short questions. Explain the concept with suitable example where required. (Marks = 1 x 5 = 5)

a) What is the difference between **break** and **continue** statement in C++?

b) How a user-defined header file can be included in the program.

c) What is function overloading? Give example.

d) Write the definition of a function that takes as input a **char** value and returns **true** if the character is uppercase; otherwise, it returns **false**.

e) Consider the following statement:

```
int* p, q;
```

what does the above C++ statement do? Explain the nature of variables created.

2) Write the output of the following codes**(Marks 2 x 5 = 10)****a)**

```
int secret (int m, int n)
{
    int temp = 0;
    for (int i = 1; i < abs(n); i++)
        temp = temp + i * m;
    return temp;
}
```

What is the output of the following C++ statement?

```
cout << secret(3, 6) << endl;
```

Output**b)**

```
int n;
int k = 2;
n = (k > 2 ? k + 1 : k - 1);
cout << n << endl << k;
```

c)

```
for (int i = 10; i >= 0; i -= 2)
{
    if (i % 3 == 0)
        break;
    cout << i << endl;
}
```

d)

```
int num1;
int num2;
int *p = &num1;
p = &num2;
*p = 25;
num1 = num2 + 6;
p = &num1;
num2 = 73;
*p = 47;
cout << *p << " " << num1 << " " <<
num2 << endl;
```

e)

```
int n = 5;
while (n < 6)
{
    cout << n << endl;
    n++;
}
cout << n << endl;
```

3) Execute the following code and fill in variable blanks with final values.

(Marks = 5)

```
a = 5;
int* ptrA = &a;
int* ptrB = &b;
int* ptrC = &c;
ptrA = ptrB;
*ptrA = 20;
*ptrB = (*ptrA) + 10;
*ptrC = *ptrB;
(*ptrB)++;
```

ptrA

ptrB

ptrC

a	0x1220	
	0x1224	
	0x1228	
b	0x122c	
	0x1230	
	0x1234	
	0x1238	
c	0x123c	

4) Write a function that takes a positive integer from the user and declares one dimensional dynamic array using new keyword. Function then initializes the array with random values and prints the total number even and odd values stored in array.

(Marks = 5)

- 5) Write a complete C++ program that uses functions to calculate average of array elements. Create a function named GetAverage(), function will takes an array and its size as arguments and will return average of array elements to main function. (Marks = 10)


- 6) Write function that takes a char* (character pointer) as argument containing a sentence and returns the total number of double letters in that sentence. (Marks = 5)

Example:

Sentence = An apple a day keeps a doctor away.

Double letters in the sentence are: 2

7) The following string is stored in the file named “FinalPaper.txt”.


 FinalPaper - Notepad

File Edit Format View Help

This is our final paper of computer programming class.

Write a C++ program that will read the input as string from the file named “FinalPaper.txt”. The function VowelsCount() will take a string and will calculate the total number of vowels in the string and store the output in the form “Total number of vowels in the string are: 16” in the same file “FinalPaper.txt” after the string that is already exists in the file. (Marks = 10)

For Example:

 FinalPaper - Notepad

File Edit Format View Help

This is our final paper of computer programming class.

Total number of Vowels in the string are: 16

Rough Work

Good Luck 😊 😐 😓