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Air University
(Final Term Examination: Fall 2021)
Department of Cyber Security

Subject: Programming Fundamentals
Course Code: CS111
Class: BS-CYS Fall 21
Section: A-B

Total Marks: 50
Date: Jan, 2021
Duration: 3 Hours
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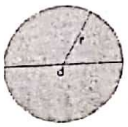
Read these instructions carefully:
1. Answer all questions.
2. Understanding of questions is part of the exam.
3. No queries will be entertained during exam time.
4. Students can use implicit assumptions.

Q. No	Questions	Marks	CLO

1	**What is the output of the following code:**
	A:
	`#include <iostream>`
	`using namespace std;`
	`int main(){`
	`int count = 0;`
	`for(int i = 0; i <= 20; i++){`
	`count++;`
	`}`
	`cout << i;`
	`return 0; }`
	B:
	`#include<iostream>`
	`using namespace std;`
	`int main() {`
	`int array[] = {0, 2, 4, 6, 7, 5, 6};`
	`int n, result = 0;`
	`for (n = 0; n < 8; n++)`
	`result += array[n];`
	`cout << result;`
	`return 0; }`
	C:
	`#include <iostream>`
	`using namespace std;`
	`Int x=7;`
	`Void printNumber()`
	`{ cout<<x; }`
	`int main(){`
	`cout<<x;`
	`printNumber();`
	`int x=5;`
	`printNumber();`
	`cout<<x;`
	`return 0; }`
	D:
	`#include<iostream>`
	`using namespace std;`
	`int main() {`
	`int vals[] = {0, 5, 9};`
	`cout << vals[0];`
	`cout << *vals;`
	`cout << *(vals+2);`
	`vals++;`
	`cout<<*vals;`
	`cout<<vals;`
	`}`
	4 | 7 | 11
	0x1 0x5 0x9
		(4*5 =20)	1 , 3

2	**A.** Write a C++ program to Find the Frequency of Characters in a String entered by the user. Ask a user to input a string and character that needs to be counted. - For example, **h** appears **2** times in this string **"hey how are you?"** **B.** Write a C++ program to Reverse an integer number entered by the user. - For example: if the user enters **534**, the program will and display **435**.	(2*5 =10)	2

3	**A.** Write a C++ program to find the diameter, circumference, and area of a circle using function. Ask the user to enter the **radius** and then compute required calculations by passing this value as an argument to function parameters. (Formulas for calculations are given below) Area A = πr^2 Circumference C = $2\pi r$ Diameter d = $2r$  Circle **B.** Write a function named "**eliminate_duplicates**" that takes an array of integers in random order and eliminates all the duplicate integers in the array. The function should take two arguments: a. an array of integers b. an integer that tells the number of cells in the array The function should not return a value, but if any duplicate integers are eliminated, then the function should change the value of the argument that was passed to it so that the new value tells the number of distinct integers in the array. Here is an example. Suppose the array passed to the function is as shown below, and the integer passed as an argument to the function is 11 0 1 2 3 4 5 6 7 8 9 10 58 | 26 | 91 | 26 | 70 | 70 | 91 | 58 | 58 | 58 | 66 Then the function should alter the array so that it looks like this: 0 1 2 3 4 5 6 7 8 9 10 58 | 26 | 91 | 70 | 66 | ?? | ?? | ?? | ?? | ?? | ?? and it should change the value of the argument so that it is 5 instead of 11. The question marks in the cells after the 5th cell indicate that it does not matter what numbers are in those cells when the function returns.	(2*5 =10)	4
4	**A.** Write a C++ program to print the elements of the array of **floating-point** in reverse order using a **pointer**. For example, if the user enters: 0 1 2 3 4 5.8 | 2.6 | 9.0 | 3.4 | 7.1 Then the modified version will be: 0 1 2 3 4 7.1 | 3.4 | 9.0 | 2.6 | 5.8 **B.** Assuming that a text file named **FirstFile.txt** contains some text written into it, write a function named **copyFile()**, that reads the file FirstFile.txt and creates a new file named **SecondFile.txt** contains all words from the file FirstFile.txt:	(2*5 =10)	4

********** End of Examination Paper **********