

CPA Chapter 4 Practice Quiz



C++ Institute Volunteer Program 2015

AUTHOR:	ADRIAN NECULA	ADRIAN.NECULA@LIVE.COM
AUTHOR'S BIO:	I am working as a C/C++ programmer at Siemens	

Chapter: 4	Accessing different kind of data		
Section: 3,4,5			
C++ Associate (CPA)	Chapter: 4	Section: 3,4,5	Question type: Single-choice
Subject: Manipulating strings			Question Number: 1
Question: What is the output of the following code fragment in C++? (assumption: all #include and the rest of the code are correct)			
<pre> int main(){ string str1 = "me"; string str2 = "ha"; string str3 = "kakarot"; string str4 = ""; str4 =str3.append(str2).insert(2,str1).replace(4,2,str2).substr(0,6); str4.append(str3.substr(9,2)).insert(6, str3.substr(2,2)); cout<<str4; return 0; } </pre>			
<p>Answers:</p> <ul style="list-style-type: none"> A) kamehamha B) kamehemeha C) kamehameha D) kamehameh 			

Chapter: 4	Accessing different kind of data		
Section: 3,4,5			
C++ Associate (CPA)	Chapter: 4	Section: 3,4,5	Question type: Single-choice
Subject: Manipulating strings			Question Number: 2
Question: What is the output of the following code fragment in C++? (assumption: all #include and the rest of the code are correct)			
<pre> int main(){ string str("11111111"); string str1 = "1", str10("10"); str.assign(8,'0').erase(6,2).append(str10) .replace(0,3, str1) .insert(0,str10.substr(1)+str10.substr(1)) .replace(4,1,str10.substr(0,1)); cout<<str<<" "<<str10.substr(0,1); } </pre>			
<p>Answers:</p> <p>A) 00101010 B) 11101010 C) 00100010 D) 10010010</p>			

Chapter: 4	Accessing different kind of data		
Section: 3,4,5			
C++ Associate (CPA)	Chapter: 4	Section: 3,4,5	Question type: Single-choice
Subject: Manipulating strings			Question Number: 3
Question: What is the output of the following code fragment in C++? (assumption: all #include and the rest of the code are correct)			
<pre> int main(){ string *str1, *str2, *str3; str1 = new string("TheForce"); str2 = new string("DarkSide"); str3 = str2; if (str1->length() == str2->size()){ str3->insert(0,str1->substr(0,3)); str2->substr(0,7)->append("IsWhithYou"); } cout<<*str2; } </pre>			
<p>Answers:</p> <ul style="list-style-type: none"> A) TheDarkSide B) Generates a compiler error C) TheForcelsWithYou D) TheDarkIsWithYou 			

Chapter: 4	Accessing different kind of data		
Section: 1	Arrays of pointers as multidimensional arrays		
C++ Associate (CPA)	Chapter: 4	Section: 1	Question type: Single-choice
Subject: Pointers and multidimensional arrays			Question Number: 4
Question: Which element of the array is set to 1?(assumption: all #include and the rest of the code are correct)			
<pre>int ***a; a = new int** [2]; a[0] = new int* [2]; a[0][0] = new int [2]; a[0][1] = new int [2]; a[1] = new int* [2]; a[1][0] = new int [2]; a[1][1] = new int [2]; **((*(a+1))+1)=1;</pre>			
Answers:			
A) a[1][1][0] B) a[0][1][1] C) a[1][1][1] D) Compilation error			

Chapter: 4	Accessing different kind of data		
Section: 1	Arrays of pointers as multidimensional arrays		
C++ Associate (CPA)	Chapter: 4	Section: 1	Question type: Single-choice
Subject: Pointers and multidimensional arrays			Question Number: 5
Question: What will happen when you run the following code? (assumption: all #include and the rest of the code are correct)			
<pre> int ***a; a = new int** [2]; a[0] = new int* [2]; a[0][0] = new int [2]; a[0][1] = new int [2]; a[1] = new int* [2]; a[1][0] = new int [2]; a[1][1] = new int [2]; **((*(a+1))+2)=1; </pre>			
<p>Answers:</p> <ul style="list-style-type: none"> A) A compile error is displayed B) A runtime error is displayed C) The code compiles and executes correctly D) None of the above 			

Chapter: 3	Extending the expressive power: pointers, functions and memory		
Section: 1,3,5			
C++ Associate (CPA)	Chapter: 3	Section: 1,3,5	Question type: Single-choice
Subject: Pointers and multidimensional arrays			Question Number: 6
Question: What is the output of the following code fragment in C++? (assumption: all #include and the rest of the code are correct)			
<pre> void IncVal (int &value){ value++; } void DecVal (int value){ value--; } int main(){ int num1 =5, num2=6; int &refNum =num1; int *pointNum = &num1; IncVal(refNum += ++(*pointNum)); pointNum = &num2; DecVal((*pointNum += refNum + num2)); cout <<num1<<num2; }; </pre>			
<p>Answers:</p> <ul style="list-style-type: none"> A) 1324 B) 1224 C) 1325 D) None of the above 			

Chapter: 4	Accessing different kind of data		
Section: 2	Conversions		
C++ Associate (CPA)	Chapter: 4	Section: 2	Question type: Single-choice
Subject: Implicit conversions			Question Number: 7
<p>Question: What is the output of the following code fragment in C++? (assumption: all #include and the rest of the code are correct)</p> <pre> //note char – unsigned 8bits type int Int = 10e1; float Float = 250e-2; int result1, result2; char result3, result4; result1 = Int + 10*Float+2; result2 = int(Int) + 10 * int(Float)+2; result3 = Int + 10*Float+3; result4 = int(Int) + 10 * int(Float)+3 if (result3 > result1) cout<<"HaHa"; else if (result4 > result2) cout<<"HaHaHa"; else cout<<"Ha"; cout<<"Ha"; </pre>			
<p>Answers:</p> <ul style="list-style-type: none"> A) HaHaHa B) HaHa C) HaHaHaHa D) HaHaHaHaHa 			

ANSWER KEY

Correct answers:

Q1 - C

Explanation: C is correct because:

```
str3 = "kakarot"
```

```
append(str2) => str4 = "kakarotha"
```

```
insert( 2, str1) => str4 = "kamekarotha"
```

```
replace(4,2, str2) => str4 = "kameharotha "
```

```
substr(0,6) => str4 = "kameha"
```

```
append(str3.substr(9,2)) => str4 = "kamehaha"
```

```
insert(6, str3.substr(2,2)) => str4 = "kamehameha"
```

Correct answers:

Q2 - A

Explanation: A is correct because: (the values of "str" after each modification)

1. str = "11111111"
2. str = "00000000"
3. str = "000000"
4. str = "00000010"
5. str = "100010"
6. str = "00100010"
7. str = "00101010"

Correct answers:

Q3 - B

Explanation: B is correct because: "substr" function returns a string not a reference to the current string (So the second "substr" would not generate a compiler error if you replace "->" with "." but also will not modify the value of the "str2" variable).

Correct answers:

Q4 - A

Explanation: `*(a+1)` returns the address of the `a[1]` array, so now we can write `*(a[1]+1)` which returns the address of the array `a[1][1]` and now we can write the expression like `*a[1][1]` which returns the first element of `a[1][1]` array that we can write it as `a[1][1][0]`.

Correct answers:

Q5 - B

Explanation: The expression `**((*(a+1))+2)=1` is equivalent to `a[1][2][0] = 1` (that means you are trying to access an element that is not in the bounds of the array)

Correct answers:

Q6 - C

Explanation:

`IncVal(refNum += ++(*pointNum));` // `++(*pointNum)` increments the value of `num1` to 6, `refNum` is also updated to 6 (being a reference to `num1`) then the value of `pointNum` is added to `refNum`, `num1` becoming 12, that the value of `num1` is incremented by `IncVal` to 13.

`DecVal((*pointNum += refNum + num2));` // now `pointNum` points to `num2` variable so the `num2` variable will contain the value 25 (at this step `refNum = 13` and `num2 = 6`, their sum 19 is added to `num2` and results 25) The `DecVal` function does not affect the value of the `num2` variable .

Correct answers:

Q7 - C

Explanation: `result3` overflows to -128 and `result4 > result3` so we display "HaHaHa" . Also the last `cout<<"Ha"` it is always displayed.

AUTHOR:	PRACHI PODDAR	PRACHI.PODDAR108@GMAIL.COM
AUTHOR'S BIO:	Prachi works at EdgeVerve, India as a product engineer (research and development). Her areas of interest are big data analysis, databases and conceptual programming in C, C++ & JAVA. Her hobbies are playing tennis and reading books.	

Chapter: 4	Accessing different kind of data		
Section: 6	Name spaces		
C++ Associate (CPA)	Chapter: 4	Section: 6	Question type: single-choice
Subject: Name spaces			Question Number: 1
Question: Which of the following correctly describes the meaning of 'namespace' feature in C++?			
<p>A) Namespaces refer to the memory space allocated for names used in a program.</p> <p>B) Namespaces refer to space between the names in a program.</p> <p>C) Namespaces refer to packing structure of classes in a program.</p> <p>D) Namespaces provide facilities for organizing the names in a program to avoid name clashes.</p>			

ANSWER KEY

Correct answers:

Q1 – D

Explanation: no explanation

AUTHOR:	VITALI KREMEZ	VKREMEZ@HOTMAIL.COM
AUTHOR'S BIO:	Becoming a programmer is deeply connected—the three year-long study of cybersecurity that students learn about on their first college day and do not stop thinking about until their last. It forces them to draw from all they have learned. It is my test of perseverance, creativity, and knowledge that appeared to be also, rather unexpectedly, the catalyst in my decision to study C++ programming. Vitali Kremez, CFE, CNDA, CEH, Sec+, Linux+, LPIC1, Suse CLA.	

Chapter: 4	Chapter 4: Accessing Different Kind of Data		
Section: 2.3	Explicit conversions		
C++ Certified Programmer Associate (CPA)	Chapter: 4	Section: 2.3	Question type: Multiple-choice
Subject: Explicit conversions			Question Number: 1
Question: What is the output of the code below?			
<pre> #include <iostream> #include <string> using namespace std; int gameOn(int); int main(){ double a = 15; a = gameOn(a); cout << a; return 0; } int gameOn(int x) { x++; return x; } </pre>			
Answers: A. 15 B. 14 C. 16 D. Compilation Error			

ANSWER KEY

Correct answer:
Q1 - C. 16

Explanation: N/A