**Bahria University, Lahore Campus**

**Solution**

Department of Computer Science

**Quiz 01**

**(Spring 2023)**

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| --- | --- | --- | --- |
| Course: | **Data Structures and Algorithm** | | Date: **23-Feburary-2023** |
| Course Code: | CSC-211 | Max Marks: **10** | |
| Faculty’s Name: | Ms. Zupash Awais |  | |

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| --- | --- |
| **CLOs** | |
| CLO1 | Explain and compare different data structures and their applications |
| CLO2 | Apply appropriate data structures according to the given scenarios and application domain |
| CLO3 | Analyze time complexity of different algorithms |
| CLO4 | Design efficient algorithm(s) to solve real world problems |

**Question 01: [02]**

Predict Output

|  |  |  |
| --- | --- | --- |
| **Sr.No.** | **Code** | **Output** |
| 1. | int add(int\* x, int\* y)  {  return \*x + \*y;  }  int func(int \*x, int c)  {  c = c - 1;  if (c == 0)  return 1;  \*x = \*x + 1;  c = \*x;  return add(x,&c) \* (\*x);  }  int main()  {  int p = 5;  cout<< func(&p, p);  } | 72 |

**Question 02: [03]**

Take an array of 10 elements. Split it into middle and store the elements in two different arrays. E.g.-  
***Initial array:***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **58** | **24** | **13** | **13** | **63** | **9** | **8** | **81** | **8** | **78** |

***After splitting:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **58** | **24** | **13** | **13** | **63** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **9** | **8** | **81** | **1** | **78** |

After splitting add 5 in each element of array1 and multiply 5 with each element of array2 then display the answer E.g.:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **63** | **29** | **18** | **18** | **68** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **45** | **40** | **405** | **40** | **390** |

#include<iostream>

using namespace std;

int main()

{

const int size = 8;

int arr[size]={1,2,3,4,5,6,7,8}, a1[4], a2[4];

int s = 0 ,e = size, p1 = 0, p2 = 0;

int mid = (s + e) / 2;

for (int i = 0; i < size; i++)

{

if (i < mid)

a1[p1++] = arr[i];

else

a2[p2++] = arr[i];

}

cout << "Array 1: ";

for (int i = 0; i < p1; i++)

{

cout << a1[i] << " ";

}

cout << endl << "Array 2: ";

for (int i = 0; i < p2; i++)

{

cout << a2[i] << " ";

}

}