CPET 1120 - C Programming For Engineering Technology **July 18, 2022**

Name:_____ **Homework 6**

1 Circle the valid initialization sequence(s).

```
int *ptr, i[10] = &ptr;                    int ptr, i[10] = &ptr;

int i[10], *ptr = i;                       int i[10], *ptr = &i[0];
```

2 Given the code snippet and table containing array integer elements, determine each integer element value after each instruction is executed.

	a[0]	a[1]	a[2]	a[3]	a[4]	a[5]
`int a[6] = {15, 20, 5, 1};`						
`int i = 5;`						
`a[i] = 10;`						
`a[2] = i + 5;`						
`a[0] = a[3] - 15;`						
`a[i] = a[i] + a[4];`						

3 After the code below executes, determine what statements and values are printed on the screen.

```
#include <stdio.h>
void function1 (int *d, int e);
void function2 (float b[ ], int num);
float function3 (const float b[ ], int num_elem);
void main (void)
{
     int i, a[10] = {9, 8, 7, 6, 5, 4, 3, 2, 1, 0};
     float x, c[5] = {2.0, 6.0, 10.0, 8.0, 4.0};

     function1(&a[5], a[8]);
     function2(c, 5);
     x = function3(&c[0], 5);

     printf("\na[5] = %d\n", a[5]);
     printf("c[ ]=");
     for(i = 0; i < 5 ; i++)
     printf("%.2f ", c[i]);
     printf("\nx = %.1f", x);
}
void function1(int *d, int e)
{
     *d = 50 + e;
}
void function2 (float b[ ], int num)
{
     int i;
     for(i = 0; i < num; i++)
     b[i] *= 10.0;
}
```

```
float function3 (const float b[ ], int num_elem)
{
     int i;
     double sum;
     sum = 0.0;
     for(i = 0; i < num_elem; i++)
     sum += b[i];
     return (sum);
}
```

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4 Identify whether each of the following assignments is valid or invalid (a loss of data is invalid) and explain why. Some assignments may depend on previous assignments.

```
int i[5] = {1,2,3,4,5}, *p1 = &i[0];
float x[5] = {1.0,2.0,3.0,4.0,5.0}, *p2 = &x[0];
```

`p1 = i;` _____

`p1 = &x[0];` _____

`p1 = i[0];` _____

`x[2] = *(x + 1);` _____

`x = p2 + 1;` _____

`p2 = x + 1;` _____

`p2 = (p2 + 1);` _____

`x[2] = x[2] + 1;` _____

`p2 = &x[2];` _____

5 Given the code statements below, determine the value stored in variable temp after each statement executes.

```
int temp, i = 5, j = 2, A[15] = {20, 10, 40, 30, 90, 50, 80, 90, 70, 60, 110,
                                 150, 130, 140, 120};
```

`temp = A[1] * A[1];` // temp = _____

`temp = A[i] - A[j];` // temp = _____

`temp = A[j] - A[i] + 35 ;` // temp = _____

`temp = A[2] + A[i] – 2*A[2*j];` // temp = _____

6 Which of the following declarations correctly declares an integer array called an_array?
A. int an_array[10];
B. int an_array;
C. an_array{10};
D. array an_array[10];

7 What is the index number of the last element in an array sized with 29 elements?
A. 29
B. 28
C. 0
D. Programmer-defined

8 Which of the following declarations correctly declares a two-dimensional array?
A. array an_array[2][5];
B. float an_array[5][2];
C. int array[5, 5];
D. char array[2];

9 Which of the following correctly accesses the seventh element stored in foo, an array with 100 elements?
A. foo[6];
B. foo[7];
C. foo(7);
D. foo;

10 Which of the following gives the memory address of the first element in array foo, an array with 100 elements?
A. foo[0];
B. foo;
C. &foo;
D. foo[1];