

# EECS 10: Computational Methods in Electrical and Computer Engineering

## Quiz on Lectures 18-24

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### Quiz: Question 1

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 7

- In the program below, what is the result of calling `grade(80-90)`?

- a) 'A'
- b) 'B'
- c) 'C'
- d) 'D'
- e) 'F'

```
1 char grade(int x)
2 { char g;
3   if (x > 90)
4     { g = 'A'; }
5   if (x > 80)
6     { g = 'B'; }
7   if (x > 70)
8     { g = 'C'; }
9   if (x > 60)
10    { g = 'D'; }
11  else
12    { g = 'F'; }
13  return g;
14 }
```

## Quiz: Question 1

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- In the program below, what is the result of calling `grade(80-90)`?

- a) 'A'
- b) 'B'
- c) 'C'
- d) 'D'
- e) 'F'

```

1 char grade(int x)
2 { char g;
3   if (x > 90)
4     { g = 'A'; }
5   if (x > 80)
6     { g = 'B'; }
7   if (x > 70)
8     { g = 'C'; }
9   if (x > 60)
10    { g = 'D'; }
11  else
12    { g = 'F'; }
13  return g;
14 }
```

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## Quiz: Question 2

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 17

- Which of the following are correct definitions of a string `s` that is initialized with the first three letters of the alphabet?  
(Check all that apply!)

- a) `char s[4] = {'A', 'B', 'C'};`
- b) `char s[] = "ABC";`
- c) `char s[] = 'ABC';`
- d) `char s[4] = {"A", "B", "C"};`
- e) `char s[3] = {'A', 'B', 'C'};`

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## Quiz: Question 2

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 17

- Which of the following are correct definitions of a string `s` that is initialized with the first three letters of the alphabet?  
(Check all that apply!)

- a) `char s[4] = {'A', 'B', 'C'};`
- b) `char s[] = "ABC";`
- c) `char s[] = 'ABC';`
- d) `char s[4] = {"A", "B", "C"};`
- e) `char s[3] = {'A', 'B', 'C'};`

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## Quiz: Question 3

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 22

- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box1` in line 3?

- a) `i=1; i<10; i++`
  - b) `i=0; i<10; i++`
  - c) `i=0; i<9; i++`
  - d) `i=10; i>0; i--`
  - e) `i=9; i>=0; i--`
- ```

1 int issorted(int L[10])
2 { int i;
3   for( Box1 )
4     { if(L[i] >= L[i+1])
5       { Box2; }
6     }
7   Box3;
8 }
```

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### Quiz: Question 3

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- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box1` in line 3?

a) `i=1; i<10; i++`  
 b) `i=0; i<10; i++`  
 c) `i=0; i<9; i++`  
 d) `i=10; i>0; i--`  
 e) `i=9; i>=0; i--`

```

1 int issorted(int L[10])
2 { int i;
3   for( Box1 )
4     { if(L[i] >= L[i+1])
5       { Box2; }
6     }
7   Box3;
8 }
```

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### Quiz: Question 4

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 23

- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box2` in line 5?

a) `return 0`  
 b) `return 1`  
 c) `continue`  
 d) `break`  
 e) `return`

```

1 int issorted(int L[10])
2 { int i;
3   for(i=0; i<9; i++)
4     { if(L[i] >= L[i+1])
5       { Box2; }
6     }
7   Box3;
8 }
```

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## Quiz: Question 4

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Questions of Midterm 2:  
Question 23

- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box2` in line 5?

-  a) `return 0`  
 b) `return 1`  
 c) `continue`  
 d) `break`  
 e) `return`

```

1 int issorted(int L[10])
2 { int i;
3   for(i=0; i<9; i++)
4     { if(L[i] >= L[i+1])
5       { Box2; }
6     }
7   Box3;
8 }
```

## Quiz: Question 5

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 24

- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box3` in line 7?

- a) `return 1`  
 b) `return 0`  
 c) `continue`  
 d) `break`  
 e) `return`

```

1 int issorted(int L[10])
2 { int i;
3   for(i=0; i<9; i++)
4     { if(L[i] >= L[i+1])
5       { return 0; }
6     }
7   Box3;
8 }
```

## Quiz: Question 5

Top 5 Most Difficult  
Questions of Midterm 2:  
Question 24

- The following function `issorted` is supposed to return true if and only if the given array `L` is sorted in increasing order.
- What should go into `Box3` in line 7?

- a) `return 1`
- b) `return 0`
- c) `continue`
- d) `break`
- e) `return`

```

1 int issorted(int L[10])
2 { int i;
3   for(i=0; i<9; i++)
4     { if(L[i] >= L[i+1])
5       { return 0; }
6     }
7   Box3;
8 }
```

## Quiz: Question 6

- What is recursion?  
(Check all that apply!)
  - a) A function that does not terminate.
  - b) A function that calls itself.
  - c) A function declaration within a function definition.
  - d) A function  $f$  that calls a function  $g$  which calls  $f$ .
  - e) A function that returns no value.

## Quiz: Question 6

- What is recursion?  
(Check all that apply!)
  - a) A function that does not terminate.
  - b) A function that calls itself.
  - c) A function declaration within a function definition.
  - d) A function  $f$  that calls a function  $g$  which calls  $f$ .
  - e) A function that returns no value.

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## Quiz: Question 7

- Given the function definition below, what is printed for the function call  $f(4)$ ?

- a) 1 2 3 4
- b) 1 2 3
- c) 4 3 2 1 0
- d) 4 3 2 1
- e) 3 2 1

```

1 void f(int x)
2 {
3     printf("%d ", x);
4     if (x > 0)
5         { f(x-1); }
6 }
```


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## Quiz: Question 7

- Given the function definition below, what is printed for the function call  $f(4)$ ?

- a) 1 2 3 4  
 b) 1 2 3  
 c) 4 3 2 1 0  
 d) 4 3 2 1  
 e) 3 2 1

```

1 void f(int x)
2 {
3     printf("%d ", x);
4     if (x > 0)
5         { f(x-1); }
6 }
```

## Quiz: Question 8

- Given the following definition of the vectors  $v_1$ ,  $v_2$  and  $v_3$ , what is a correct way to perform a vector addition of  $v_1$  and  $v_2$ ?

```
struct v {int x, y;} v1, v2, v3;
```


- a)  $v_3 = v_1 + v_2;$   
 b)  $v_3[0] = v_1[0] + v_2[0];$   
 $v_3[1] = v_1[1] + v_2[1];$   
 c)  $v_3.x = v_1.x + v_2.x;$   
 $v_3.y = v_1.y + v_2.y;$   
 d)  $v_3 = v_1[x]*v_2[y] + v_1[y]*v_2[x]$   
 e)  $v_3->x = v_1->x + v_2->x;$   
 $v_3->y = v_1->y + v_2->y;$



## Quiz: Question 8

- Given the following definition of the vectors **v1**, **v2** and **v3**, what is a correct way to perform a vector addition of **v1** and **v2**?

```
struct v {int x, y;} v1, v2, v3;
```

- a) `v3 = v1 + v2;`
- b) `v3[0] = v1[0] + v2[0];`  
`v3[1] = v1[1] + v2[1];`
-  c) `v3.x = v1.x + v2.x;`  
`v3.y = v1.y + v2.y;`
- d) `v3 = v1[x]*v2[y] + v1[y]*v2[x]`
- e) `v3->x = v1->x + v2->x;`  
`v3->y = v1->y + v2->y;`

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## Quiz: Question 9

- Given the following enumerator definition, what is printed by `printf("%d", two);`?

```
enum count {one, two, three, four = 5};
```

- a) `one`
- b) `two`
- c) `0`
- d) `1`
- e) `2`

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## Quiz: Question 9

- Given the following enumerator definition, what is printed by `printf("%d", two);`?

```
enum count {one, two, three, four = 5};
```

- a) one
- b) two
- c) 0
-  d) 1
- e) 2

## Quiz: Question 10

- Which of the following components do you find in every computer?  
(Check all that apply!)

- a) **RAM**
- b) **BUG**
- c) **ROM**
- d) **CPU**
- e) **IBM**

## Quiz: Question 10

- Which of the following components do you find in every computer?  
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## Quiz: Question 11

- What is the decimal value of the (unsigned) binary number  $10101010_2$  ?

- a) **10101010**
- b) **170**
- c) **85**
- d) **101**
- e) **255**

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### Quiz: Question 11

- What is the decimal value of the (unsigned) binary number  $10101010_2$  ?

a) 10101010

 b) 170

c) 85

d) 101

e) 255

### Quiz: Question 12

- What is the binary value of the hexadecimal number  $1F_{16}$  ?

a) 01010101


b) 10010000

c) 01111111

d) 00011111

e) 10001111

## Quiz: Question 12

- What is the binary value of the hexadecimal number  $1F_{16}$  ?
  - a) 01010101
  - b) 10010000
  - c) 01111111
  -  d) 00011111
  - e) 10001111

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## Quiz: Question 13

- What could cause a **bus error**?  
(Check all that apply!)
  - a) Waking up late and missing the bus.
  - b) Calling a recursive function.
  - c) Accessing an array with an index out of range.
  - d) Accessing an pointer variable with invalid value.
  - e) Accessing an integer variable with invalid value.

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### Quiz: Question 14

- In a C program, which properties does every object have?  
(Check all that apply!)
  - a) A size.
  - b) A value.
  - c) A color.
  - d) A type.
  - e) A location.

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## Quiz: Question 14

- In a C program, which properties does every object have?  
(Check all that apply!)

- a) A size.
- b) A value.
- c) A color.
- d) A type.
- e) A location.

## Quiz: Question 15

- Given the program segment below, what is the value of `*p` at the end?

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

```
1 int x[] = {1,2,3,4,5};  
2 int *p = &x[2];  
3  
4 p++;  
5 p -= 2;  
6
```

## Quiz: Question 15

- Given the program segment below, what is the value of `*p` at the end?

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

```

1 int x[] = {1,2,3,4,5};
2 int *p = &x[2];
3
4 p++;
5 p -= 2;
6

```

## Quiz: Question 16

- Given the function and variable definitions shown below, which function call is valid? (Check all that apply!)

- a) `StrLen(cp);`
- b) `StrLen(ca);`
- c) `StrLen(c);`
- d) `StrLen(i);`
- e) `StrLen("abc");`

```

1 int StrLen(char *s)
2 { int l = 0;
3
4   while(*s)
5     { s++;
6       l++;
7     }
8   return l;
9 }
10 char *cp = "cp";
11 char ca[] = "cp";
12 char c = 'c';
13 int i = 42;

```



## Quiz: Question 16

- Given the function and variable definitions shown below, which function call is valid? (Check all that apply!)

- a) `StrLen(cp);`
- b) `StrLen(ca);`
- c) `StrLen(c);`
- d) `StrLen(i);`
- e) `StrLen("abc");`

```

1 int StrLen(char *s)
2 { int l = 0;
3
4     while(*s)
5     { s++;
6       l++;
7     }
8     return l;
9 }
10 char *cp = "cp";
11 char ca[] = "cp";
12 char c = 'c';
13 int i = 42;

```

## Quiz: Question 17

- Which of the following are functions declared in `stdio.h`? (Check all that apply!)

- a) `printf`
- b) `printfd`
- c) `fprintf`
- d) `sprintf`
- e) `fputs`

## Quiz: Question 17

- Which of the following are functions declared in `stdio.h`?  
(Check all that apply!)

- a) `printf`
- b) `printd`
- c) `fprintf`
- d) `sprintf`
- e) `fputs`