

# EECS 10: Computational Methods in Electrical and Computer Engineering

## Quiz on Lectures 1-8

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## Quiz: Question 1

- Which Unix command shows you the contents of the current directory?
  - a) `pwd`
  - b) `ls`
  - c) `dir`
  - d) `list`
  - e) `cd`

## Quiz: Question 1

- Which Unix command shows you the contents of the current directory?

- a) `pwd`
-  b) `ls`
- c) `dir`
- d) `list`
- e) `cd`

## Quiz: Question 2

- Which of the following Unix commands renames file "text1" into "homework1"?

- a) `ren text1 homework1`
- b) `ren homework1 text1`
- c) `mv text1 homework1`
- d) `rm text1 homework1`
- e) `rm homework1 text1`

## Quiz: Question 2

- Which of the following Unix commands renames file “text1” into “homework1”?

a) `ren text1 homework1`

b) `ren homework1 text1`

 c) `mv text1 homework1`


d) `rm text1 homework1`

e) `rm homework1 text1`

## Quiz: Question 3

- What is C *not*?
  - a structured programming language
  - a compiled programming language
  - a high-level programming language
  - a portable programming language
  - a object-oriented programming language

### Quiz: Question 3

- What is C *not*?
  - a) a structured programming language
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  - c) a high-level programming language
  - d) a portable programming language
  -  e) a object-oriented programming language

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### Quiz: Question 4

- What is the meaning of the following code fragment?

```
/* printf("C programming is great!\n") */
```

- a) it prints "C programming is boring!"
- b) it is the main function of the C program
- c) it is a comment ignored by the compiler
- d) it prints "C programming is great!"
- e) it is a syntax error because a semicolon is missing after the `printf()` statement

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## Quiz: Question 4

- What is the meaning of the following code fragment?

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/* printf("C programming is great!\n") */
```

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-  c) it is a comment ignored by the compiler
- d) it prints "C programming is great!"
- e) it is a syntax error because a semicolon is missing after the `printf()` statement

## Quiz: Question 5

- What is true about of the following compiler call? (Check all that apply!)

```
% gcc -Wall -ansi HelloWorld.c -o HelloWorld
```

- a) the GNU C Compiler is called to generate an executable program called `HelloWorld`
- b) the compiler will print warning and/or error messages about any non-ANSI compliance in the code
- c) the compiler will ignore all warnings
- d) the compiler will read the file `HelloWorld.c`
- e) the compiler will overwrite the `HelloWorld` file if it already exists

## Quiz: Question 5

- What is true about of the following compiler call? (Check all that apply!)

```
% gcc -Wall -ansi HelloWorld.c -o HelloWorld
```

- a) the GNU C Compiler is called to generate an executable program called `HelloWorld`
- b) the compiler will print warning and/or error messages about any non-ANSI compliance in the code
- c) the compiler will ignore all warnings
- d) the compiler will read the file `HelloWorld.c`
- e) the compiler will overwrite the `HelloWorld` file if it already exists

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## Quiz: Question 6

- Which of the following constructs is a valid arithmetic operator in C?  
(Check all that apply!)

- a) `*`
- b) `\`
- c) `#`
- d) `>>`
- e) `-`

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- d) `>>`
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## Quiz: Question 7

- What is the value of the integer `x` after the following statement?

```
x = 11 / 3 - 11 % 3;
```

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

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## Quiz: Question 7

- What is the value of the integer  $x$  after the following statement?

```
x = 11 / 3 - 11 % 3;
```

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

## Quiz: Question 8

- What is the value of the integer  $x$  after the following statement?

```
x = (10 - (3 - (20 - -10)));
```


- a) 7
- b) 17
- c) 27
- d) 37
- e) 77



## Quiz: Question 8

- What is the value of the integer `x` after the following statement?

```
x = (10 - (3 - (20 - -10)));
```


- a) 7
- b) 17
- c) 27
-  d) 37
- e) 77

## Quiz: Question 9

- Which of the following format strings will print an **unsigned int** value in decimal format when used with `printf()`?

- a) `"%lu"`
- b) `"%ld"`
- c) `"%ul"`
- d) `"%ui"`
- e) `"%u"`

## Quiz: Question 9

- Which of the following format strings will print an **unsigned int** value in decimal format when used with `printf()`?
  - a) `"%lu"`
  - b) `"%ld"`
  - c) `"%ul"`
  - d) `"%ui"`
  -  e) `"%u"`


## Quiz: Question 10

- Which of the following statements will correctly read a decimal value from `stdin` into a variable `x` of type **signed int**?
  - a) `stdin("%x", &u);`
  - b) `scanf("%d", &x);`
  - c) `scanf("%u", &x);`
  - d) `stdin("%u", x);`
  - e) `scanf("%d", x);`

## Quiz: Question 10

- Which of the following statements will correctly read a decimal value from `stdin` into a variable `x` of type `signed int`?

a) `stdin("%x", &u);`

 b) `scanf("%d", &x);`

c) `scanf("%u", &x);`

d) `stdin("%u", x);`

e) `scanf("%d", x);`

## Quiz: Question 11

- What is the value of the integer `x` after the following statement?

```
x = 3 << 2 >> 1;
```

a) **Syntax Error!**

b) 321

c) 4


d) 6

e) 12

## Quiz: Question 11

- What is the value of the integer `x` after the following statement?

```
x = 3 << 2 >> 1;
```

- a) `Syntax Error!`
- b) `321`
- c) `4`
-  d) `6`
- e) `12`

## Quiz: Question 12

- Which of the following constants is of type `double`?  
(Check all that apply!)

- a) `42`
- b) `4.2`
- c) `4e2`
- d) `4E2`
- e) `42f`

## Quiz: Question 12

- Which of the following constants is of type **double**?  
(Check all that apply!)

a) 42

b) 4.2

c) 4e2

d) 4E2

e) 42f

## Quiz: Question 13

- What is the result type of the following expression?

```
1 - 2.3 * (4.5f / 67L) - (short int)89
```

a) **short int**

b) **int**

c) **long int**


d) **float**

e) **double**

## Quiz: Question 13

- What is the result type of the following expression?

```
1 - 2.3 * (4.5f / 67L) - (short int)89
```

- a) `short int`
- b) `int`
- c) `long int`
- d) `float`
-  e) **`double`**

## Quiz: Question 14

- What is the value of `x` after the following code segment?


```
int    i = 10;  
double d = 0.5;  
int    x;  
  
x = i/3.0 + d;
```

- a) 3.333333
- b) 3
- c) 3.833333
- d) 0.333333
- e) 3.5

## Quiz: Question 14

- What is the value of  $x$  after the following code segment?

```
int    i = 10;  
double d = 0.5;  
int    x;  
  
x = i/3.0 + d;
```

- a) 3.333333
-  b) 3
- c) 3.833333
- d) 0.333333
- e) 3.5

## Quiz: Question 15

- Given the following code fragment,

```
double x;  
double y;  
  
x = (int)(y + 0.5);
```

which of the following statements is true?  
(Check all that apply!)

- a) for  $y=3.0$ ,  $x$  is set to 3.5
- b) for  $y=3.0$ ,  $x$  is set to 3.0
- c) for  $y=3.5$ ,  $x$  is set to 4.0
- d) for  $y=3.9$ ,  $x$  is set to 3.0
- e) for  $y=3.9$ ,  $x$  is set to 4.0

## Quiz: Question 15

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(Check all that apply!)


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- b) for  $y=3.0$ ,  $x$  is set to 3.0
- c) for  $y=3.5$ ,  $x$  is set to 4.0
- d) for  $y=3.9$ ,  $x$  is set to 3.0
- e) for  $y=3.9$ ,  $x$  is set to 4.0

## Quiz: Question 16

- Today's computers run at which clock speed?
  - a) 85 MPH
  - b) 1 kHz
  - c) 1 ms
  - d) 1 GHz
  - e) 1 MHz



## Quiz: Question 16

- Today's computers run at which clock speed?
  - a) 85 MPH
  - b) 1 kHz
  - c) 1 ms
  -  d) 1 GHz
  - e) 1 MHz

## Quiz: Question 17

- Which of the following constructs are valid type names in C? (Check all that apply!)
  - a) `short char`
  - b) `unsigned long long int`
  - c) `unsigned float`
  - d) `short integer`
  - e) `long double`

## Quiz: Question 17

- Which of the following constructs are valid type names in C? (Check all that apply!)

a) `short char`

b) `unsigned long long int`

c) `unsigned float`

d) `short integer`

e) `long double`

## Quiz: Question 18

- Assume `i` is a variable of type `int` and `d` is a variable of type `double`. Which statement is true for the following assignment? (Check all that apply!)

```
i = (int)d;
```

a) The assignment is invalid: syntax error!

b) The precision of `i` is doubled.

c) The parentheses should go around `d`.

d) The value in `d` is converted to an integer value and then assigned to `i`.

e) Any fractional part in `d` is truncated off.

## Quiz: Question 18

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- c) The parentheses should go around `d`.
- d) The value in `d` is converted to an integer value and then assigned to `i`.
- e) Any fractional part in `d` is truncated off.

## Quiz: Question 19

- Which of the following expressions correctly computes the polynomial  $p = 2x^2 - 3x + 4$ ? (Check all that apply!)

- a) `p = 2xx - 3x + 4;`
- b) `p = 2x^2 - 3x + 4;`
- c) `p = x*2*x - 3*x + 4.0;`
- d) `p = 2*(x*x + 3)*x + 4;`
- e) `p = (2*x - 3)*x + 4;`

## Quiz: Question 19

- Which of the following expressions correctly computes the polynomial  $p = 2x^2 - 3x + 4$  ?  
(Check all that apply!)

a) `p = 2xx - 3x + 4;`

b) `p = 2x^2 - 3x + 4;`

c) `p = x*2*x - 3*x + 4.0;`

d) `p = 2*(x*x + 3)*x + 4;`

e) `p = (2*x - 3)*x + 4;`

## Quiz: Question 20

- Which of the following names are valid keywords in C? (Check all that apply!)

a) `if`

b) `then`

c) `switch`

d) `main`

e) `Long`

## Quiz: Question 20

- Which of the following names are valid keywords in C? (Check all that apply!)

- a) `if`
- b) `then`
- c) `switch`
- d) `main`
- e) `Long`

## Quiz: Question 21

- Which of the following names are valid identifiers in C? (Check all that apply!)

- a) `xyz`
- b) `MI5`
- c) `if`
- d) `My_Very_Long_Variable_Name`
- e) `2fast4you`

## Quiz: Question 21

- Which of the following names are valid identifiers in C? (Check all that apply!)

- a) `xyz`
- b) `MI5`
- c) `if`
- d) `My_Very_Long_Variable_Name`
- e) `2fast4you`

## Quiz: Question 22

- What is the result of the evaluation of the following expression?


```
1 == 2 || 3 < 4 && 5 > -6
```

- a) `true`
- b) `false`
- c) `1`
- d) `0`
- e) `bool`

## Quiz: Question 22

- What is the result of the evaluation of the following expression?

```
1 == 2 || 3 < 4 && 5 > -6
```

- a) `true`
- b) `false`
-  c) `1`
- d) `0`
- e) `bool`

## Quiz: Question 23

- What is the result of the evaluation of the following expression?

```
27 < 42 ? 27 : 42
```

- a) `27`
- b) `42`
- c) `15`
- d) `true`
- e) `false`

### Quiz: Question 23

- What is the result of the evaluation of the following expression?

```
27 < 42 ? 27 : 42
```

- a) 27
- b) 42
- c) 15
- d) true
- e) false

### Quiz: Question 24

- If integer  $x = 1$  at the beginning, what is the value of  $x$  after the following statement?

```
x += x + 1;
```


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



### Quiz: Question 24

- If integer  $x = 1$  at the beginning, what is the value of  $x$  after the following statement?

```
x += x + 1;
```

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

### Quiz: Question 25

- Assuming that  $x$  is a variable of type `int`, which values of  $x$  satisfy the following condition?

```
x % 2 == 1
```

- a) no value
- b) any value
- c) any value between 1 and 2
- d) any odd value
- e) any even value

## Quiz: Question 25

- Assuming that  $x$  is a variable of type `int`, which values of  $x$  satisfy the following condition?

```
x % 2 == 1
```

- a) no value
- b) any value
- c) any value between 1 and 2
- d) any odd value
- e) any even value

## Quiz: Question 26

- Assume that  $x$  is an integer in the range of 1 through 10 inclusively. Which of the following expressions can be used as a test for  $x$  being an even number?

(Check all that apply! 2 pts.)

- a) `x % 2 == 0`
- b) `x / 2 > 1`
- c) `x==2 || x==4 || x==6 || x==8 || x==10`
- d) `x % 2 == 1`
- e) `x / 2 * 2 == x`

## Quiz: Question 26

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- b)  $x / 2 > 1$
- c)  $x==2 \ || \ x==4 \ || \ x==6 \ || \ x==8 \ || \ x==10$
- d)  $x \% 2 == 1$
- e)  $x / 2 * 2 == x$

## Quiz: Question 27

- Given the following program fragment, what is printed when it gets executed?

- a) nothing
- b) %d
- c) 10
- d) 20
- e) 30

```
int i = 0;
int s = 0;
while (1)
{
    i++;
    if (i > 10)
        { break; }
    if (i % 2 == 1)
        { continue; }
    s += i;
}
printf("%d", s);
```

## Quiz: Question 27

- Given the following program fragment, what is printed when it gets executed?

- a) nothing
- b) %d
- c) 10
- d) 20
- e) 30

```
int i = 0;
int s = 0;
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{
    i++;
    if (i > 10)
        { break; }
    if (i % 2 == 1)
        { continue; }
    s += i;
}
printf("%d", s);
```

## Quiz: Question 28

- Which of the following variable declarations is valid in ANSI-C?  
(Check all that apply! 2 pts.)
- a) `double x;`
  - b) `double x, y, z;`
  - c) `double x = 1.0;`
  - d) `double x = 1, y = 2, z = 3;`
  - e) `double x,y,z = 1,2,3;`

## Quiz: Question 28

- Which of the following variable declarations is valid in ANSI-C?

(Check all that apply! 2 pts.)


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- c) `double x = 1.0;`
- d) `double x = 1, y = 2, z = 3;`
- e) `double x,y,z = 1,2,3;`

## Quiz: Question 29

- Which of the following data types has the largest range of representable numbers?

- a) `short int`
- b) `signed long int`
- c) `unsigned int`
- d) `char`
- e) `long long`

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- Which of the following data types has the largest range of representable numbers?
  - a) `short int`
  - b) `signed long int`
  - c) `unsigned int`
  - d) `char`
  -  e) `long long`

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### Quiz: Question 30


- Which of the following data types can store the largest value?
  - a) `long int`
  - b) `float`
  - c) `long long int`
  - d) `double`
  - e) `unsigned long long int`

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### Quiz: Question 30

- Which of the following data types can store the largest value?
  - a) `long int`
  - b) `float`
  - c) `long long int`
  -  d) **`double`**
  - e) `unsigned long long int`