EECS 10: Computational Methods in Electrical and Computer Engineering Quiz on Lectures 9-17

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Midterm 1 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 5: Question 6 (65.8% wrong answers)
- Which of the following statements is true about data types in ANSI-C? (Check all that apply! 2 pts.)
 - a) int has a larger range than char
 - b) char can store a smaller value than unsigned int
 - c) long has a smaller range than unsigned int
 - d) float has a higher precision than double
 - e) float can store a greater value than long int

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Midterm 1 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 4: Question 5 (69.9% wrong answers)
- Which of the following constructs denotes a valid type name in C? (Check all that apply! 2 pts.)
 - a) short char
 - b) unsigned char
 - c) unsigned long int
 - d) short double
 - e) signed float

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 - a) short char
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Midterm 1 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 3: Question 13 (75.1% wrong answers)
- Which of the following C expressions yield the same result?

(Check all that apply!)

- a) 4 << 8 % 5 / 2
- b) (4 << 8) % 5 / 2
- c) 4 << 8 % (5 / 2)
- d) (4 << 8 % 5) / 2
- e) 4 << (8 % 5) / 2

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- Top 5 most "difficult" questions:
 - Rank 3: Question 13 (75.1% wrong answers)
- Which of the following C expressions yield the same result?

(Check all that apply!)

- a) 4 << 8 % 5 / 2 = 8
 - b) (4 << 8) % 5 / 2 = 2
 - c) 4 << 8 % (5 / 2) = 4
 - d) (4 << 8 % 5) / 2 = 16
 - e) 4 << (8 % 5) / 2 = 8

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Midterm 1 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 2: Question 20 (79.8% wrong answers)

- Which of the following statements are true about the program? (Check all that apply!)
 - a) y will be the integer part of $log_2(x)$
 - b) y will be equal to x
 - c) It computes the product of ${\bf x}$ and ${\bf y}$
 - d) It sets y to the sum of x and y
 - e) The condition in line 3 is equivalent to (x/=2)!=0

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- Top 5 most "difficult" questions:
 - Rank 2: Question 20 (79.8% wrong answers)

```
unsigned int x=0, y=0;
scanf("%d", &x);
while((x>>=1) != 0)
    {y += 1;}
printf("%d", y);
```

- Which of the following statements are true about the program? (Check all that apply!)
- \longrightarrow a) \mathbf{y} will be the integer part of $\log_2(x)$
 - b) y will be equal to x
 - c) It computes the product of x and y
 - d) It sets y to the sum of x and y
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Midterm 1 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 1: Question 21 (79.8% wrong answers)

- When running the program, which of the following is correct? (Check all that apply!)
 - a) If the user enters 6, it will print 2.
 - b) If the user enters 6, it will print 3.
 - c) If the user enters 4, it will print 2.
 - d) If the user enters 4, it will print 1.
 - e) If the user enters 4, it will print 4.

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- Top 5 most "difficult" questions:
 - Rank 1: Question 21 (79.8% wrong answers)

```
unsigned int x=0, y=0;
scanf("%d", &x);
while((x>>=1) != 0)
    {y += 1;}
printf("%d", y);
```

- When running the program, which of the following is correct? (Check all that apply!)
- a) If the user enters 6, it will print 2.
 - b) If the user enters 6, it will print 3.
 - c) If the user enters 4, it will print 2.
 - d) If the user enters 4, it will print 1.
 - e) If the user enters 4, it will print 4.

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Quiz: Question 1

- Which of the following expressions would be treated as a true condition when used with an if statement?
 - (Check all that apply!)
 - a) (int)5.99 > 5
 - b) 1 || 0 && 1
 - c) 5 >= 5
 - d) (1 + 2 + 3) == (3 << 2 >> 1)
 - e) 5 5

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 Which of the following expressions would be treated as a true condition when used with an if statement?

(Check all that apply!)

```
a) (int)5.99 > 5
b) 1 || 0 && 1
c) 5 >= 5
d) (1 + 2 + 3) == (3 << 2 >> 1)
```

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Quiz: Question 2

 If cnt is an integer counter that counts upwards in steps of 1, how could one update the value of cnt? (Check all that apply!)

```
a) cnt += 1;
b) cnt = cnt + 1;
c) ++cnt;
d) cnt++;
e) cnt += cnt;
```

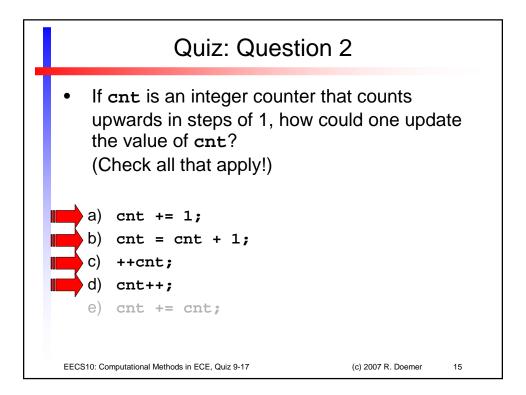
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 What is the value of x after the following code fragment is executed?

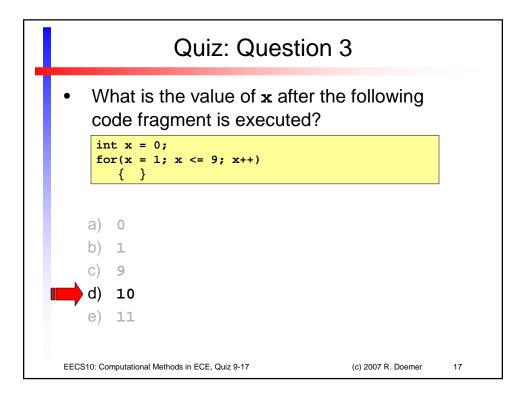
```
int x = 0;
for(x = 1; x <= 9; x++)
{ }</pre>
```

- a) 0
- b) 1
- c) 9
- d) 10
- e) 11

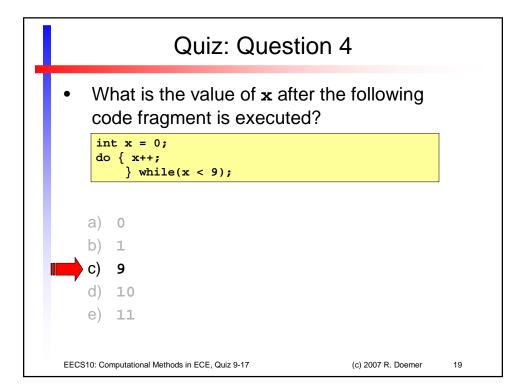
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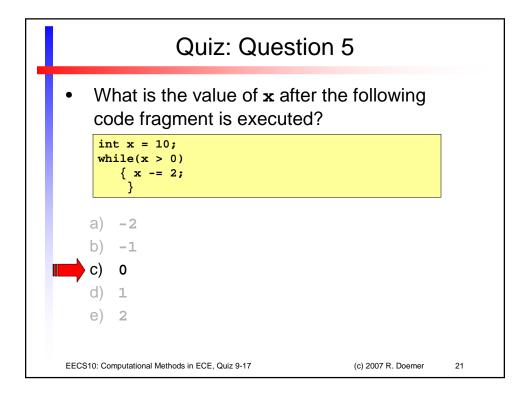
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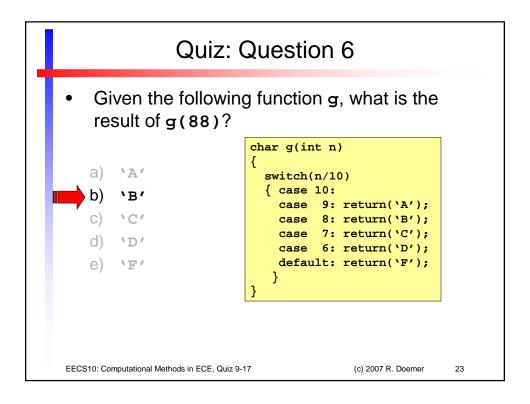
Quiz: Question 4 What is the value of x after the following code fragment is executed? int x = 0; do { x++; } while(x < 9); a) 0 b) 1 c) 9 d) 10 e) 11 EECS10: Computational Methods in ECE, Quiz 9-17 (c) 2007 R. Doemer 18



Quiz: Question 5 What is the value of x after the following code fragment is executed? int x = 10; while(x > 0) { x -= 2; } a) -2 b) -1 c) 0 d) 1 e) 2 EECS10: Computational Methods in ECE, Quiz 9-17 (c) 2007 R. Doemer 20



Quiz: Question 6 Given the following function g, what is the result of g(88)? char g(int n) a) **`A'** switch(n/10) { case 10: b) **`B**′ case 9: return('A'); `C' case 8: return('B'); case 7: return('C'); 'D' case 6: return('D'); default: return('F'); `F' EECS10: Computational Methods in ECE, Quiz 9-17 (c) 2007 R. Doemer



```
Quiz: Question 7
What is output by the following C statement?

printf("x = %03d", 3 + 4);</pr>

a) x = 034

b) x = 037
c) x = 007
d) x = 7
e) x = 347

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```

What is output by the following C statement?

printf("x = %03d", 3 + 4);

- a) x = 034
- b) x = 037
- c) $\mathbf{x} = 007$
 - $d) \mathbf{x} = 7$
- e) x = 347

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Quiz: Question 8

- In the gdb debugger, what does next do?
 - a) It moves to the next argument of the function.
 - b) It calls the next function in the program.
 - c) It executes the next statement in the program.
 - d) It prints the value of the next variable.
 - e) It loads the next program into the debugger.

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- In the gdb debugger, what does next do?
 - a) It moves to the next argument of the function.
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 - e) It loads the next program into the debugger.

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Quiz: Question 9

 Given the following code fragment, which of the following statements are true?

(Check all that apply!)

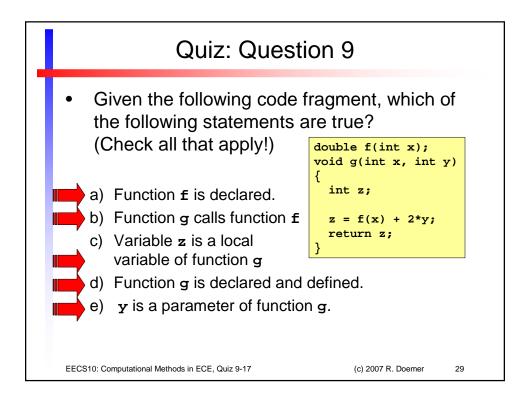
- a) Function **f** is declared.
- b) Function g calls function £
- c) Variable z is a local variable of function g
- double f(int x);
 void g(int x, int y)
 {
 int z;

 z = f(x) + 2*y;
 return z;
 }
- d) Function g is declared and defined.
- e) y is a parameter of function g.

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```
Given that the C standard math library is included, which of the following expressions results in the value 4.0?
(Check all that apply!)
a) pow(16.0, .5)
b) 4.0 * cos(0.0)
c) 3 + sin(0.0)
d) log10(10000.00)
```

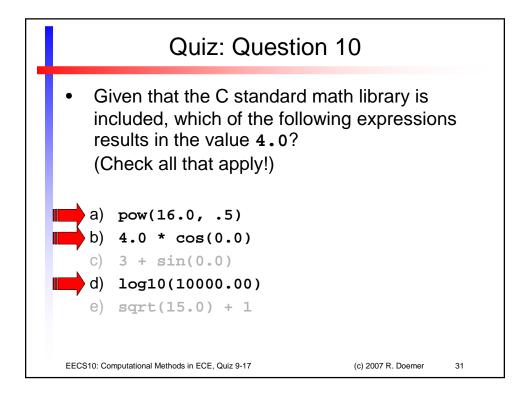
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e) sqrt(15.0) + 1

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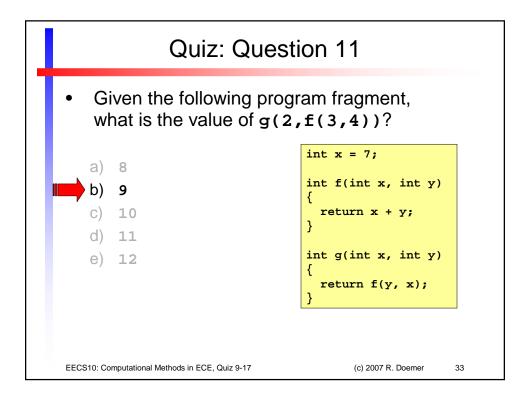


```
Quiz: Question 11

• Given the following program fragment,
  what is the value of g(2,f(3,4))?

a) 8
b) 9
c) 10
d) 11
e) 12

[int x = 7;
  int f(int x, int y)
  {
    return x + y;
  }
  int g(int x, int y)
  {
    return f(y, x);
  }
```



What is output by the following program fragment?

```
a) EECS00 1
```

b) **EEC 10 0**

c) **E E**

d) EECS C

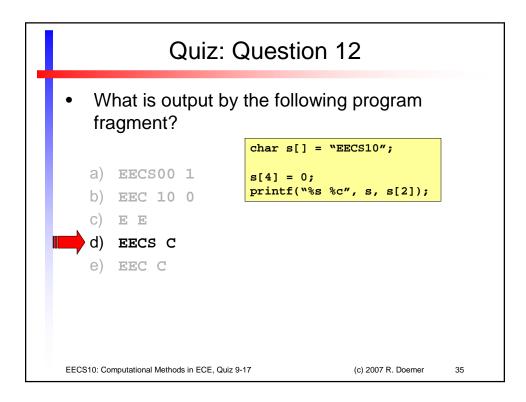
e) EEC C

char s[] = "EECS10";
s[4] = 0;
printf("%s %c", s, s[2]);

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Given the definition double p=0.0125;
 which of the following C statements will print out p = 1.25%?
 (Check all that apply!)

```
a) printf("p = %d.25%%", (int)(p*100.0));
```

b) printf("p = %p", 100.0*p);

c) printf("p = %.2f%%", p*100.0);

d) printf("p = %.2f%c", p*100.0, '%');

e) printf("p = ", 100.0 * p, "%%");

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- Given the definition double p=0.0125;
 which of the following C statements will print out p = 1.25%?
 (Check all that apply!)
- a) printf("p = %d.25%%", (int)(p*100.0));
 - b) printf("p = %p", 100.0*p);
 - c) printf("p = %.2f%%", p*100.0);
 - d) printf("p = %.2f%c", p*100.0, '%');
 - e) printf("p = ", 100.0 * p, "%%");

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Quiz: Question 14

- Which of the following statements is true for an algorithm? (Check all that apply!)
 - a) An algorithm must be indeterministic.
 - b) An algorithm solves a problem quickly.
 - c) An algorithm is historically based on Al Gore's rythm.
 - d) An algorithm executes a program using pseudo code.
 - e) An algorithm must terminate after a finite number of steps.

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- Which of the following statements is true for an algorithm? (Check all that apply!)
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Quiz: Question 15

Which of the following declarations can be added to the program in line 8 without creating a compilation error?

(Check all that apply!)

```
1 int x = 2;
                             2 int f(int v, double w);
                             3 int g(int x, int y)
                             5
                                  z = 2*x + 5*y - 42;
a) int f(int v, double w); 6
                                  return z;
```

- b) int g = 0;
- int g(int x, int y);
- d) int x = 2;
- int f(double v, double w);

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Quiz: Question 15 Which of the following declarations can be added to the program in line 8 without creating a compilation error? (Check all that apply!) 1 int x = 2; 2 int f(int v, double w); 3 int g(int x, int y) 4 { int z; 5 z = 2*x + 5*y - 42;return z; int f(int v, double w); 6 int g = 0; int g(int x, int y); int x = 2; int f(double v, double w); EECS10: Computational Methods in ECE, Quiz 9-17 (c) 2007 R. Doemer

Quiz: Question 16

- 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++
                              1 int issorted(int L[10])
                              2 { int i;
   c) i=0; i<9; i++
                            3
                                  for( Box1 )
                                  { if(L[i] >= L[i+1])
                              4
   d) i=10; i>0; i--
                             5
                                    { Box2; }
                              6
   e) i=9; i>=0; i--
                              7
                                  Box3;
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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--
```

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Quiz: Question 17

- 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

```
int issorted(int L[10])
{ int i;
  for( Box1 )
  { if(L[i] >= L[i+1])
      { Box2; }
  }
  Box3;
}
```

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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 Box2 in line 5?
- **a**)
- a) return 0
 - b) return 1
 - c) continue
 - d) break
 - e) return

```
int issorted(int L[10])
{ int i;
  for( Box1 )
  { if(L[i] >= L[i+1])
      { Box2; }
  }
  Box3;
}
```

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Quiz: Question 18

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

```
int issorted(int L[10])
{ int i;
  for( Box1 )
  { if(L[i] >= L[i+1])
      { Box2; }
  }
  Box3;
}
```

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Quiz: Question 18 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 0 1 int issorted(int L[10]) b) return 1 2 { int i; continue for(Box1) { if(L[i] >= L[i+1]) break { Box2; } return 7 Box3; 8 } EECS10: Computational Methods in ECE, Quiz 9-17 (c) 2007 R. Doemer