EECS 10: Computational Methods in Electrical and Computer Engineering Quiz on Lectures 19-25

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Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 1: Question 6 (70.8% incorrect answers)
- In the program below, what is the result of calling grade(75)?

```
a) \A′
b) \B′
```

c) 'C'

d) **'D'**

e) 'F'

1 char grade(int x) { char g; if(x > 90){ g = 'A'; } if (x > 80){ g = 'B'; } if(x > 70){ g = 'C'; } 8 (x > 60)9 { g = 'D'; } 10 11 12 13 return g; (c) 2010 R. Doemer

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Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 1: Question 6 (70.8% incorrect answers)

1

char grade(int x)

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In the program below, what is the result of calling grade (75)?

```
2
                                  { char g;
                                    if(x > 90)
                                      { g = 'A'; }
    \A/
                                    if(x > 80)
                               6
                                      { g = 'B'; }
b)
    'B/
                                       (x > 70)
    /C/
                                        g = 'C'; }
                                    if (x > 60)
    'D'
                              10
                              11
    `F'
                              12
                                       g = 'F'; }
                              13
                                    return g;
                              14 }
```

Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 2: Question 16 (55.5% incorrect answers)
- Which of the following are valid declarations of an integer array A of size 3? (Check all that apply!)

```
a) int A[3];
```

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```
b) int A[3] = \{1,2,3\};
```

- c) int $A[3] = \{\};$
- d) int $A[3] = \{1, 2\};$
- e) int $A[] = \{1,2,3\};$

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Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 2: Question 16 (55.5% incorrect answers)
- Which of the following are valid declarations of an integer array A of size 3? (Check all that apply!)
- int A[3]; int $A[3] = \{1,2,3\};$
 - int $A[3] = {};$
 - int $A[3] = \{1, 2\};$ int A[] = $\{1,2,3\}$;

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Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 3: Question 14 (54.8% incorrect answers)
- Given two global variables int x=7 and int y=8, which of the following functions properly swaps the values such that x=8 and y=7? (Check all that apply!)

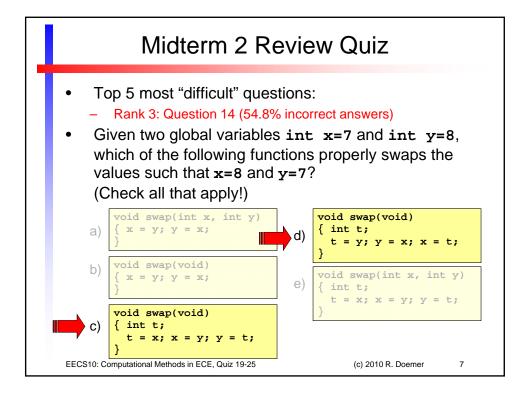
```
void swap(int x, int y)
     x = y; y = x;
a)
```

- void swap(void) b) x = y; y = x;
- void swap(void) { int t; t = x; x = y; y = t;

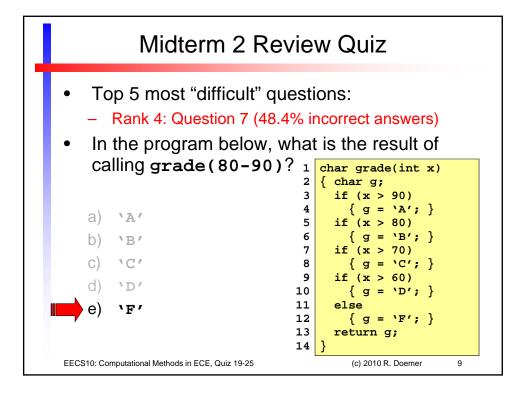
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```
void swap(void)
    { int t;
d)
      t = y; y = x; x = t;
    void swap(int x, int y)
e)
      t = x; x = y; y = t;
```

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```
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   Top 5 most "difficult" questions:
      Rank 4: Question 7 (48.4% incorrect answers)
   In the program below, what is the result of
    calling grade(80-90)? 1 char grade(int x)
                                    { char g;
                                      if(x > 90)
                                        { g = 'A'; }
       'A'
   a)
                                      if (x > 80)
                                        { g = 'B'; }
       'B'
   b)
                                      if(x > 70)
                                  7
       \C'
                                        { g = 'C'; }
                                  8
                                  9
                                         (x > 60)
       'D'
                                         { g = 'D'; }
                                 10
                                 11
       `F'
                                      else
                                         { g = 'F'; }
                                 12
                                 13
                                      return g;
                                 14 }
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```



Midterm 2 Review Quiz

- Top 5 most "difficult" questions:
 - Rank 5: Question 4 (41.3% incorrect answers)
- In the gdb debugger, which commands allow you to run your program step by step? (Check all that apply! 2 pts.)
 - a) step
 - b) cont
 - c) run
 - d) next
 - e) back

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Midterm 2 Review Quiz Top 5 most "difficult" questions: Rank 5: Question 4 (41.3% incorrect answers) In the gdb debugger, which commands allow you to run your program step by step? (Check all that apply! 2 pts.) a) step b) cont c) run

Quiz: Question 1

 In the program below, what is printed by the function call g(1)?

```
a) 1 2b) 2 3
```

next back

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c) 1 1

d) 2

e) 1

```
int f(int x)
{ printf("%d ", x);
   return x + 1;
}
int g(int x)
{ printf("%d ", f(x));
   return x + 2;
}
```

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In the program below, what is printed by the function call g(1)?

- a) 12
- b) 2 3
- c) 1 1
- d) 2
- e) 1

```
int f(int x)
{ printf("%d ", x);
    return x + 1;
}
int g(int x)
{ printf("%d ", f(x));
    return x + 2;
}
```

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Quiz: Question 2

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

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- What is recursion? (Check all that apply!)
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Quiz: Question 3

- Given the function definition below, what is printed for the function call £(3)?
 - a) 1 2 3
 - b) 1 2 3 4
 - c) 3 2 1 0
 - d) 4 3 2 1
 - e) 3 2 1

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 Given the function definition below, what is printed for the function call £(3)?

```
a) 1 2 3
b) 1 2 3 4
c) 3 2 1 0
```

- 3 4
- d) 4 2 2 1
- d) 4 3 2 1
- e) 3 2 1

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Quiz: Question 4

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



 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?

```
perform a vector addition of v1 and v2?

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

a) v3 = v1 + v2;
b) v3 = v1[x]*v2[y] + v1[y]*v2[x]
c) v3[0] = v1[0] + v2[0];
  v3[1] = v1[1] + v2[1];

d) v3.x = v1.x + v2.x;
  v3.y = v1.y + v2.y;
e) v3->x = v1->x + v2->x;
  v3->y = v1->y + v2->y;
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```

Quiz: Question 5

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

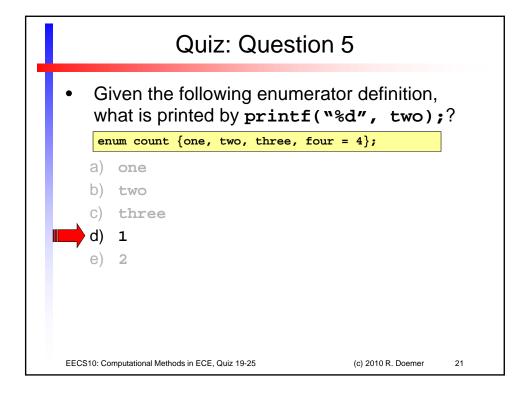
```
enum count {one, two, three, four = 4};
```

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

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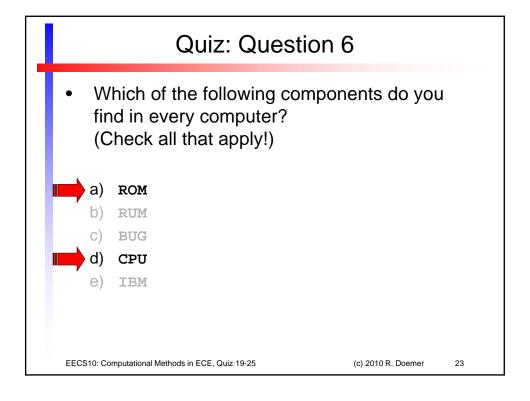


Quiz: Question 6 Which of the following components do you find in every computer? (Check all that apply!) a) ROM b) RUM c) BUG d) CPU e) IBM

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- What is the decimal value of the (unsigned) binary number 01010101₂?
 - a) 01010101
 - b) 85
 - c) 101
 - d) 170
 - e) 255

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- What is the decimal value of the (unsigned) binary number 01010101₂?
 - a) 01010101
- **b**) 85
 - c) 101
 - d) 170
 - e) 255

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Quiz: Question 8

- What is the binary value of the hexadecimal number FF₁₆?
 - a) 01010101
 - b) 10001000
 - c) 01110111
 - d) 00010001
 - e) 11111111

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Quiz: Question 8 What is the binary value of the hexadecimal number FF₁₆? a) 01010101 b) 10001000 c) 01110111 d) 00010001 e) 11111111

Quiz: Question 9

- How many bits do you need to represent one hexadecimal digit?
 - a) 1
 - b) 2
 - c) 4
 - d) 8
 - e) 16

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- How many bits do you need to represent one hexadecimal digit?
 - a) '
 - b) 2
- **c**)
 - d) 8
 - e) 16

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Quiz: Question 10

- 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) Referencing a pointer variable with invalid value.
 - e) Accessing an integer variable with invalid value.

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- 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) Referencing a pointer variable with invalid value.
 - e) Accessing an integer variable with invalid value.

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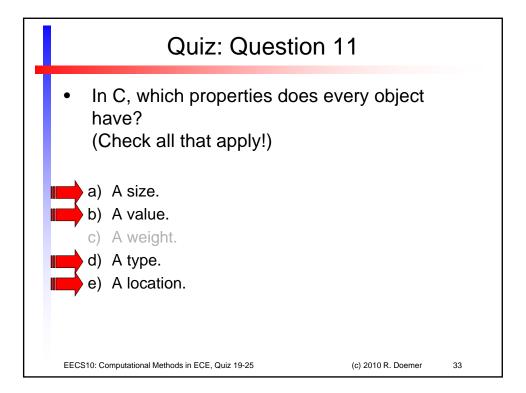
Quiz: Question 11

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

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

```
a) 1
b) 2
c) 3
```

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

e) 5

d) 4

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

```
<u>→</u> b)
```

b) 2

1

- c) 3
- d) 4
- e) 5

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

p++;
p -= 2;
```

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Quiz: Question 13

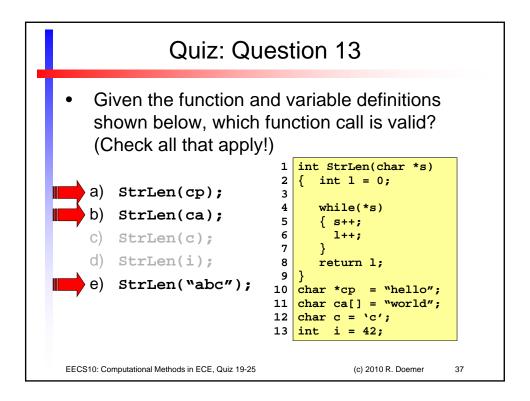
 Given the function and variable definitions shown below, which function call is valid? (Check all that apply!)

```
1 int StrLen(char *s)
                          { int 1 = 0;
a) StrLen(cp);
                             while(*s)
b) StrLen(ca);
                             { s++;
                        6
C) StrLen(c);
                        7
d) StrLen(i);
                        8
                             return 1;
                        9 }
e) StrLen("abc");
                       10 char *cp = "hello";
                       11 char ca[] = "world";
                       12 char c = \c';
                       13 int i = 42;
```

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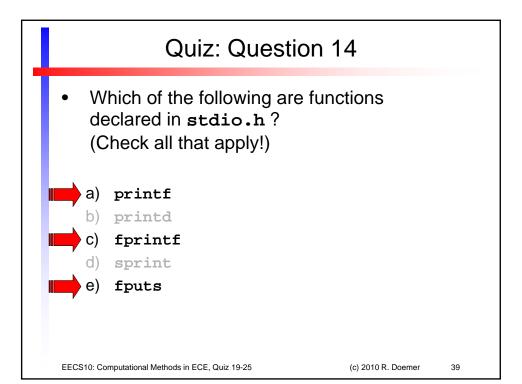


- Which of the following are functions declared in stdio.h?
 (Check all that apply!)
 - a) printf
 - b) printd
 - c) fprintf
 - d) sprint
 - e) fputs

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 What does the following code segment print?

```
char s[] = "Hppe!Mvdl!boe!Ibqqz!Ipmjebzt";
char *p;
p = &s[0];
while(*p)
f printf("%c", *p - 1);
p++;
}
```

- a) Hppe!Mvdl!boe!Ibqqz!Ipmjebzt
- b) Happy Holidays and Good Luck
- c) Happy Luck and Good Holidays
- d) Good Holidays and Happy Luck
- e) Good Luck and Happy Holidays

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What does the following code segment print?

```
char s[] = "Hppe!Mvdl!boe!Ibqqz!Ipmjebzt";
char *p;
p = &s[0];
while(*p)
f printf("%c", *p - 1);
p++;
}
```

- a) Hppe!Mvdl!boe!Ibqqz!Ipmjebzt
- b) Happy Holidays and Good Luck
- C) Happy Luck and Good Holidays
- d) Good Holidays and Happy Luck
- e) Good Luck and Happy Holidays

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