CSC 111—Fall 2013
Quiz 2 Solutions

1. What is the return type of the following syntactically correct C function prototype?
   `float function(int a, long b)`

   a. float only
   b. int only
   c. long only
   d. both int and long

2. What is the output of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
int main(void) {
     int a = 5;
     int b = 10;
     int k;
     for (k=0; k<2; k++) {
          a++;
          b--;
     } /*for*/
     printf("%d  %d  %d\n", a, b, k);
     return EXIT_SUCCESS;
} /*main*/
```

   a. 8 13 3
   b. 8 13 2
   c. 7 8 2
   d. 7 8 1

3. Which pair of tokens is used to indicate the *beginning* and *end* of a compound statement in the programming language C?

   a. { }
   b. < >
   c. ( )
   d. [ ]

4. Which line of the following C program will generate a syntax error? Note that the number on the left of each line indicates the line number in the program and is not part of the program code.

```
1. #include <stdio.h>
2. #include <stdlib.h>
3. int main (void)  {
4.      height = 4;
5.      int height;
6.      printf("The height is %d\n", height);
7.      return EXIT_SUCCESS;
8. } /* main */
```

   a. line 3
   b. line 4
   c. line 5
   d. line 6

5. Which one of the following operators is the correct one to compare two int variables for equality?

   a. =
   b. equal
   c. :=
   d. ==

6. The first expression in a for statement header in the programming language C is
   a. The termination condition
   b. The incremental step expression
   c. The initialization expression
   d. None of the above

7. The C preprocessor

   a. compiles C programs
   b. includes text files using #include and substitutes text using #define directives
   c. builds an application or an executable
   d. checks for semantic errors

8. Which one of the following is **NOT** a valid assignment operator in the programming language C?

   a. +=
   b. =
   c. ==
   d. %=

9. What is the effect of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
int main(void) {
      int k;     /* loop variable */
      for (k=5;  k==5;  k=k-1) {
            printf("%3d",  k);
      } /*for*/
      printf("Eureka!\n");
      return EXIT_SUCCESS;
} /*main*/
```

   a. Eureka!
   b. 5 4 3 2 1 … infinite loop
   c. 5 Eureka!
   d. No output

10. What is the output of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
int main(void) {
      int k;     /* loop variable */
      for (k=15;  k>6;  k=k-2) {
            printf("%3d",  k);
      } /*for*/
      return EXIT_SUCCESS;
} /*main*/
```

   a. 15 13 11 9 7 4 1
   b. 16 14 12 10 8 6
   c. 15 13 11 9 7
   d. 15 11 7 3 -1

11. What is the missing code that should replace the comment in line 10 of the following syntactically correct C program to compute 7 raised to the power of 3? Note that the number on the left hand side of each line indicates the line number in the program and is not part of the program code.

```
1.    #include <stdio.h>
2.    #include <stdlib.h>
3.    int main(void){
4.    int x, n, k =0;
5.    int z;
6.      x = 7;    //Base
7.      n = 3;    //Power
8.      z = 1;    //Answer
9.      while (k<n){
10.       /*missing code */
11.       k++;
12.     }/*while*/
13.     printf("%d raised to the power of %d is %d\n",
        x, n, z);
14.     return EXIT_SUCCESS;
15.   }/*main*/
```

a. z *= x;

b. z = z*n;

c. z +=x;

d. z = z+n;

12. What is the output of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
int main(void) {
      int k=0;
      while (k < 10) {
            k++;
      }/*while*/
      printf("k = %d\n", k);
      return EXIT_SUCCESS;
}/*main*/
```

a. k = 9

b. k = 0

c. k = 10

d. k = 1

13. What is the output of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
void arithmeticSequence(void) {
     int f = 7;      int j = 6;
     int n = 5;      int k = 0;
     int a = f;
     while (k<n) {
          printf("  %d ", a);
          a = a + j;
          k++;
     } /*while*/
     printf("\n");
} /*arithmeticSequence*/

int main(void) {
     arithmeticSequence();
     return EXIT_SUCCESS;
} /*main*/
```

a. 7 14 21 28 35
b. 7 13 19 25 31 37
c. 7 13 19 25 31
d. 0 6 12 18 24

14. What is the output of the following syntactically correct C program?

```
#include <stdio.h>
#include <stdlib.h>
int main(void){
     int k = 1;
     while (k < 10) {
          if (k%2 == 0) printf(" %d ", k);
          k = k + 1;
     }/*while*/
     printf("\n");
     return EXIT_SUCCESS;
} /*main*/
```

a. 1 3 5 7
b. 2 4 6 8 10
c. 0 2 4 6 8
d. 2 4 6 8

15. What is the output of the following syntactically correct C Program?

```
#include <stdio.h>
#include <stdlib.h>

void f1(void){
     printf("learn something useful\n");
}/*f1*/

void f3(void){
     printf("Always ");
}/*f3*/

void f5(void){
     printf("desire ");
}/*f5*/

void f7(void){
     printf("to ");
}/*f7*/

int main(void){
     f3(); f5(); f7(); f1();
     return EXIT_SUCCESS;
}/*main*/
```

a. Always desire to learn something useful

b. learn something useful Always desire to

c. Always desire to

d. desire to learn something useful Always