CMSC 21 Reviewer

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OBJECTIVES

At the end of the review, the student is expected to

o   Recall and differential the different basics of C
o   Recall the role of functions
o   Recall the different types of parameter passing, different parameter types and
o   Recall the different atomic, non atomic, dynamic and static data types in C

PROLOGUE

This reviewer is supposed to mimic the exam to be given by your lecturer but does not ensure that the type of exam will be the same NOR does you lab instructor ensure that the reviewer covered every topic that needs to be discussed.

MULTIPLE CHOICE, MULTIPLE ANSWER.

Instructions: On a clean sheet of paper (or in a printed version of this reviewer), write the LETTER of the appropriate answer(s) for each item. Note that there could be more than one answer for each item. If you think that all the choices are wrong, simply write E. The correct answer(s) will not be revealed here though. Please consult the lab instructor about the correct answers.

_____ 1.   Which of the following statements is/are TRUE?
   a.   A pointer (of any datatype) can hold the address of an address.
   b.   A pointer (of any datatype) can hold the address of any datatype.
   c.   A pointer (of a specified datatype) can hold the address of an address.
   d.   A pointer (of a specified datatype) can hold the address of a specified datatype.

_____ 2.   Which of the following statements will print `Cheaters never win!`?
   a.   `/*printf("Cheaters never win!");*/`
   b.   `//printf("Cheaters never win!");`
   c.   `printf("/*Cheaters never win!*/");`
   d.   `printf("Cheaters never win!"/**/);`

_____ 3.   An array can be
   a.   A collection of characters.
   b.   A collection of array of characters.
   c.   A collection of pointers to array of characters.
   d.   A collection of a specifically user-defined structure.

_____ 4.   Which of the following is/are not TRUE about files?
   a.   Files are stored in the main memory.
   b.   Files are deleted once a program terminates.
   c.   Files in C are accessed using a `FILE` pointer.
   d.   Files are stored in the secondary memory.

_____ 5. Assume that a function named `foo()` accepts two integer inputs `a` and `b` and returns the sum of the two numbers. Which of the following statements is/are valid?
    a. `int k; k =foo(4,6,0);`
    b. `int d; d=foo(&2, &3);`
    c. `printf("The sum is %d.\n", foo(4,5));`
    d. `foo(4,5);`

_____ 6. Suppose we have `int a[3]={2,3,4,5};` . Which of the following will be the result(s) of `printf("%d", a[4/2]+*a);` ?
    a. 4
    b. 5
    c. 6
    d. The statement will yield an error.

_____ 7. Which of the following statements is/are not TRUE about functions?
    a. A function can have an argument and no return value.
    b. A function can have more than one argument and more than one return value.
    c. A function can have no argument and more than one return value.
    d. A function can have no argument and no return value.

_____ 8. Which of the following statements is/are TRUE about recursive functions?
    a. A recursive function can have more than one base case.
    b. A recursive function can have more than one recursive case.
    c. A recursive function can have no base case.
    d. A recursive function can have no recursive case.

For items 9 – 12 refer to the (independent) code snippets below:

/*CODE SNIPPET A*/	/*CODE SNIPPET B*/	/*CODE SNIPPET C*/
``int k=0; a=1;

if(a){
   if(k){
      printf("A");
   }
   printf("B");
}
else{
   if(!(k)){
      printf("C");
   }
   printf("D");
}``` | ```int ble(int h){
if(h==0)
   return 55;
else if ((h>0)&&(h<54))
   return
      ble(h-10)+bleh(h-h);
else
   return ble(h-h/2)+2;
}/*end of function*/``` | ```typedef crush{
   char name[20];
   int age;
}Baby;
typedef FameMonster{
   Baby Beiber;
   int money;
}LadyGaga;
struct sampler{
   Baby chiqui;
   LadyGaga KatyP;
   int mahirap;
}PaanoTo;``` |

_____ 9. Which of the following is the result of `CODE SNIPPET A`?
    a. B
    b. AB
    c. D
    d. CD

_____ 10. Which of the following statements is/are not FALSE?
   a. The `if`-part of a conditional statement is executed if the condition returns non-zero.
   b. The `if`-part of a conditional statement is executed if the condition returns zero.
   c. It is possible to execute the statements under the `if` and `else` part of the same `if-else` conditional statement.
   d. None of the above.

_____ 11. Referring to `CODE SNIPPET B`, what is the result of `ble(90)`?
   a. 532
   b. 235
   c. 325
   d. 523

_____ 12. Referring to `CODE SNIPPET B`, what is the result of `ble(40)`?
   a. 165
   b. 275
   c. 220
   d. 330

_____ 13. Referring to `CODE SNIPPET C`, which of the following is/are correct?
   a. `PaanoTo SirReg;`
   b. `PaanoTo.LadyGaga.Baby.age=19;`
   c. `PaanoTo.chiqui.money = 3000;`
   d. `strcpy(PaanoTo.KatyP.Beiber.name, "Justin Beiber");`

_____ 14. Referring to `CODE SNIPPET C`, which of the following is/are not FALSE?
   a. `sampler` is a structure tagname.
   b. `LadyGoga` is a structure datatype.
   c. `PaanoTo` is a structure variable.
   d. None of the above.

_____ 15. Referring to `CODE SNIPPET C`, suppose we have `struct sampler A[5]` and `A` should be passed to a function, which of the following is a valid actual parameter for function `foofoo()`?
   a. `foofoo(A);`
   b. `foofoo(*A);`
   c. `foofoo(A[5]);`
   d. `foofoo(&A);`

For items item 16 – 20, refer to the code snippets below:

```
/*CODE SNIPPET D*/                       /*CODE SNIPPET E*/
//refer to code snippet c                int ***a,b[40][40], *c, d;
struct sampler bravo[4];                 int **e;

//assume  at  this  point  that  all     d=50;
//elements of bravo has a value          c=&d;

FILE * fp;

fp=fopen("writeup.dat", "wb");
//missing code here

fclose(fp);
```

_____ 16. Referring to `CODE SNIPPET D`, if we want to write into the binary file `writeup.dat`, which of the following is the right thing to use?
   a. `fwrite(A,1,sizeof(sampler),fp);`
   b. `fwrite(A,sizeof(A),5,fp);`
   c. `fwrite(A,sizeof(sampler),5,fp);`
   d. `fwrite(&A,sizeof(sampler),5,fp);`

_____ 17. Which of the following is/are TRUE about file access functions?
   a. The function `putc()` puts a character into a variable while a `getc()` puts a character into a file.
   b. A file mode "`r`" is the same as "`rt`", "`r+`" and "`rt`".
   c. A `fscanf()` can be used for a binary file.
   d. All of the above.

_____ 18. Referring to `CODE SNIPPET E`, which of the following is/are valid statement(s)?
   a. `d = b;`
   b. `e = &b;`
   c. `a = &b;`
   d. `*a = c;`

_____ 19. A new function, `isPalin()`, was added to the `<string.h>` library. The prototype for the function is `int isPalin(const char * str, int size);` .Which of the following statements is correct in using `isPalin()`?
   a. `if(isPalin("hello",5)){printf("Palindrome!\n");}`
   b. `char name[5]={'h','e','l','l','o'};`
      `isPalin(name, 5);`
   c. `char name[5]={'h','e','l','l','o'}, str2[100];`
      `strcpy(str2,name);`
      `int f = isPalin(strcat(str2,"olleh"),10);`
   d. None of the Above

_____ 20. Which of the following is/are TRUE about arrays and structures?
   a. Arrays are passed through pass by reference.
   b. An array of structures is possible.
   c. A structure of arrays is possible.
   d. None of the above.

Galingan sa Exam!!! ☺