Mock Exam 2

CCPROG1 exam

Theoretical Portion

Write the answer to the following questions. Write all your answers in SMALL LETTERS. You are allowed to use spaces if needed (in case the answer has 2 or more words).

1. The name of the notation that uses prefixes to signify the kind of datatype a variable uses.
    a. Hungarian notation, Hungarian
2. What does '\a' mean?
    a. alert
3. This is a kind of instruction executed before compilation actually takes place. This is something written in the source code.
    a. preprocessor directive, pre-processor directive
4. What is the data-type that is larger than float but is still a decimal type of data-type.
    a. double
5. What is the difference between a++ and ++a?
    a. For a++, the value is added after the line of the expression and ++a is added before.
    b. For a++, the value is added for the expression, ++a is a special operation for pointers.
    c. For a++, increments the variable while ++a decrements the variable.
    d. They are both the same in terms of execution
6. What is the operator used to obtain an address?
    a. &
7. Is it possible for a c file to have two variables with the exact same name?
    a. YES
8. Is "do_while" a valid identifier?
    a. YES
9. Is "_co1or_" a valid identifier?
    a. YES
10. Is it possible to represent any kind of for loop in a while loop? At Least when it comes to for and while loops discussed in this course.
    a. YES

Syntax and Logic Portion

Given the expressions and code snippets shown, identify the final value of the variables or expressions asked.

11. What is the result of the evaluation "2*(3<5)-(3-5)/2"?
    a. 3
12. Given this code, what is the final result of the variable nSum.

```
int a = 5, b = 6, c = b;
a= (b=c) - a;
```

    a. 1

13. Given this code, what is the final result of the variable nSum.

```
int nSum;
for(nSum=0;nSum<4;nSum++);
        nSum = nSum * 2;
```

    a. 8

14. Given this code, what is the final result of the variable a.

```
int a = 3, b = 4, c = 5;
a = (b+=1)*c - a*a;
```

    a. 16

Debugging Portion

Given the code shown, study how the code works and identify the values of the variables.

```
#include <stdio.h>
#define A_N 4
#define B_N 2
#define C_N 3
#define D_N 1

void mockExamOne(int *nNum1, int *nNum2)
{
    int nNumA = *nNum1;
    int nNumB = *nNum2;
    int nChecker = *nNum2+nNumA-nNumB;
    if(nChecker==A_N){
        ++nNumA; nNumB++;
    }else if(nChecker==B_N){
        *nNum1=2e2; *nNum2=3e2;
    }if(nChecker==C_N){
        *nNum1=nNumA; *nNum2=nNumB;
    }else if(nChecker==D_N){
        *nNum1=nNumB; *nNum2=nNumA;
    }
}
```

```
int main(){
    int nNum1, nNum2;

    nNum1 = 1; nNum2 = 3;
    mockExamOne(&nNum1, &nNum2);
    return 0;
}
```

15. For code A, what is the value of nNum1?
    a. 3
16. For code A, what is the value of nNum2?
    a. 1

```c
#include <stdio.h>

void mockExamTwo(long *lNum1, long lNum2)
{
    while(lNum2<=10){
        *lNum1 = *lNum1 + lNum2++;
        if(lNum2%2==1)
            lNum2 *= 2;
    }
}

int main(){
    long lNum1, lNum2;

    lNum1 = 0; lNum2 = 1;
    mockExamTwo(&lNum2, lNum1);
    printf("%ld %ld\n", lNum1, lNum2);
    return 0;
}
```

17. For code B, what is the value of lNum1?
    a. 0
18. For code B, what is the value of lNum2?
    a. 9

```c
#include <stdio.h>

int mockExamThree(int *nNum1, int *nNum2)
{
    *nNum1 = 3.5f;
    *nNum2 = 4.44;
    switch((*nNum2 * 10) % 10){
        case 1: *nNum1 - 1; break;
        case 2: *nNum1 ++; break;
        case 3: *nNum1 -= 1; break;
        case 4: *nNum1 % 2; break;
    }
    return *nNum2;
}

int main(){
    int nNum1, nNum2;
    nNum1 = mockExamThree(&nNum1, &nNum2);
    return 0;
}
```

19. For code C, what is the value of nNum1?
    a. 4
20. For code C, what is the value of nNum2?
    a. 4

Note: if you typed the codes for this for compilation, it may take a long time. At times, tracing the code is just faster than coding it.