**Programming in C**

**Quiz 3**

March 30, 2015

Instructions: Write briefly and clearly. If I can’t read it, I can’t grade it. **Write ONLY ONE answer.**

1. (5 points) Rewrite the following c code fragment by using switch instead of nested if. Assume that all of the variables were declared.

|  |  |
| --- | --- |
| **Nested If code** | **switch code** |
| if (i== -10)  sum = 0 ;  else if (i== 5 || i== 10 || i==20)  sum = sum + x;  else if ( i== 25 || i==30)  sum = sum + 2\*x ;  else  sum = sum + 10 ; | **switch (i) {**  **case -10: sum = 0;**  **break;**  **case 5:**  **case 10:**  **case 20: sum = sum + x ;**  **break;**  **case 25:**  **case 30: sum = sum + 2\*x ;**  **break;**  **default: sum = sum + 10;**  **}** |

1. (3 points) Find the equivalent expression for the following condition expression, without using brackets (there should be NO brackets in the final answer).

|  |  |
| --- | --- |
| Condition Expression | Equivalent expression without brackets |
| !(!a||!b) | **a && b** |
| !(a>d && !(a>c)) | **a<=d || a>c** |
| !(a!=b && c<=d) | **a==b || c > d** |

1. (6 points) The following program is run 4 times and each time the input is shown in the first column. Fill in the column of **printed output** for each corresponding input.

#include <stdio.h>

|  |  |
| --- | --- |
| **INPUT** | **PRINTED OUTPUT** |
| **5 10** | **D** |
| **10 10** | **B** |
| **10 5** | **A** |
| **12 5** | **C** |

int main () {

int x,y;

scanf("%d%d",&x,&y);

if(x>5)

if(x<=10)

if(y<10)

printf("A");

else

printf("B");

else

printf("C");

else

printf("D");

return 0;

}

1. (6 points) Show the output of the following program:

|  |  |
| --- | --- |
| **Program** | **Output** |
| #include <stdio.h> **// 6 points**  int main(void) {  int n, sum;  sum=0;  n=294;  while(n>0){  sum=sum+n%10;  n=n/10;  printf("%d\n",sum);  }  return 0;  } | **4**  **13**  **15** |