Question 1  (10 points)

Given the following do while loop code fragment:

```cpp
int limit = 8;
int loopcount = 10;

cout << 'H';

do {}
```
```cpp
cout << 'E'
loopcount++;
} while (loopcount <= limit);
cout << "LP";
```

What is the output of the above code?

1. HLP
2. HELP
3. HEELP
4. HEEELP
5. None of the above

Score: 10.0 / 10.0

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**Question 2 (10 points)**

Which answer below best describes the output of the following code fragment?

```cpp
for (int n = 0; n < 0; n--)
cout << n << ' ';
```

1. 0
2. 0 -1 -2 -3 -4 forever...
3. -1 -2 -3 -4 forever...
4. nothing - no output
5. None of the above

Score: 10.0 / 10.0

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**Question 3 (10 points)**

To produce the following one line of output:

```
2 4 6 8 10
```

What should the loop condition be in the following do while loop?

```cpp
int n = 0;
do {
    n = n + 2;
cout << n << ' ';
```
Question 4 (10 points)

Given the following while loop code fragment:

```java
int count = -5;
while (count <= 15) {
    sum = sum + count;
    count++;
}
```

Which of the following for loops is equivalent to the preceding while loop?

1. for (int count=-5; count <= 15; count++)
   sum = sum + count ;

2. for (int count=-5; count <= 15; count++) {
    sum = sum + count ;
    count++;}

3. for (int count=-5; count <= 15; count++) {
    count++;      
    sum = sum + count ;
}

4. for (int count=1; count <= 21; count++)
    sum = sum + count ;

5. None of the above

Score: 10.0 / 10.0
Question 5 (10 points)

What is the value of the variable loopcount after the following while loop is exited?

```c
int loopcount = 1;
int alpha = 0;

while (loopcount <= 145) {
    alpha += 7;
    loopcount++;
}
```

1. 1
2. 144
3. 145

100.0% 4. 146
5. None of the above

Score: 10.0 / 10.0

Question 6 (10 points)

Which answer below best describes the output of the following code fragment?

```c
int n = 1;

while (n <= 5)
    cout << n << ' ';
n++;
```

1. 1 2 3 4 5
2. 1 2 3 4

100.0% 3. 1 1 1 forever...
4. 2 3 4 5
5. 2 3 4 5 6
6. None of the above

Score: 10.0 / 10.0

Question 7 (10 points)

What is the output of the following code fragment?

```c
int sum = 0;
int outercount = 1;
int innercount = 0;
```
while (outercount <= 3) {
    innercount = 1;
    while (innercount <= outercount) {
        sum += innercount;
        innercount++;
    }
    outercount++;
}

cout << sum << flush << endl;

1. 1
2. 4
3. 10
4. 20
5. 35
6. None of the above

Score: 10.0 / 10.0

Question 8 (10 points)

Consider the following program:

```cpp
#include <iostream.h>
void SwapEm(int&, int);
int tmp = 0;

void main() {
    int a = 4, b = 23;
    SwapEm(a, b);
    cout << a << endl;
    cout << b << endl;
    cout << tmp << endl;
}

void SwapEm(int& oneth, int twoth) {
    tmp = oneth;
    oneth = twoth;
    twoth = tmp;
}
```

Determine what value, (don't worry about formatting), is printed for variable `a` when the function call is carried out.
Question 9 (10 points)

Consider the following program:

```c
#include <iostream.h>
void SwapEm(int&, int);
int tmp = 0;
void main() {
    int a = 4, b = 23;
    SwapEm(a, b);
    cout << a << endl;
    cout << b << endl;
    cout << tmp << endl;
}
void SwapEm(int& oneth, int twoth) {
    tmp = oneth;
    oneth = twoth;
    twoth = tmp;
}
```

Determine what value, (don't worry about formatting), is printed for variable $b$ when the function call is carried out.

1. 0  
2. 4  
3. 2  
4. 23  
5. none of the above

Score: 10.0 / 10.0
```cpp
#include <iostream.h>
void SwapEm(int&, int);
int tmp = 0;

void main() {
    int a = 4, b = 23;
    SwapEm(a, b);
    cout << a << endl;
    cout << b << endl;
    cout << tmp << endl;
}

void SwapEm(int& oneth, int twoth) {
    tmp = oneth;
    oneth = twoth;
    twoth = tmp;
}
```

Determine what value, (don't worry about formatting), is printed for variable tmp when the function call is carried out.

1. 0
2. 4
3. 9
4. 23
5. none of the above

Score: 10.0 / 10.0

Total Score: 100.0 / 100 = 100.0%

Submission of this quiz constitutes your Virginia Tech Honor Code Pledge:

"On my honor, I have neither given nor received unauthorized aid on this examination."