

Instructions: This homework assignment focuses primarily on some of the basic syntax and semantics of C++. The answers to the following questions can be determined from Topics 2 through 6 of the lecture notes and Chapters 2 through 4 of the text.

After you have analyzed the questions and decided what answers you believe are correct, you may find it useful to write some short programs to test your logic. Submit your answers to the Curator collection point HWQuiz3.

For questions 1 through 6, assume the following variables have been declared

```
int    anInt;
double aDble;
char   aChar;
```

and assume the standard input stream `cin` contains the following values, separated by tabs:

12	4.9	A	-46.32
----	-----	---	--------

Determine the value of the indicated variable after the execution of the given statement; each question is independent, that is, each starts with the stream contents shown above.

1. [6 points] `anInt` after `cin >> anInt >> aChar;`

- | | | |
|-------|---------|------------------|
| 1) 1 | 4) 4 | 7) None of these |
| 2) 2 | 5) 45 | |
| 3) 12 | 6) 1245 | |

2. [6 points] `aChar` after `cin >> anInt >> aChar;`

- | | | |
|--------|-----------------|------------------|
| 1) 4 | 3) '\t' (a tab) | 5) None of these |
| 2) '4' | 4) '.' | |

3. [6 points] `aDble` after `cin >> aDble >> aChar;`

- | | | |
|---------|----------|------------------|
| 1) 1.0 | 4) 4.0 | 7) -46.3 |
| 2) 1.2 | 5) 4.9 | 8) -46.32 |
| 3) 12.0 | 6) -46.0 | 9) None of these |

4. [6 points] `aChar` after `cin >> aDble >> aChar;`

- | | | |
|-----------------|--------|------------------|
| 1) 4 | 4) '.' | 7) '9' |
| 2) '4' | 5) 'A' | 8) '-' |
| 3) '\t' (a tab) | 6) '2' | 9) None of these |

5. [6 points] `anInt` after `cin >> aDble >> anInt;`

- | | | |
|-------|-------|------------------|
| 1) 1 | 4) 4 | 7) -46 |
| 2) 2 | 5) 9 | 8) 32 |
| 3) 12 | 6) 49 | 9) None of these |

6. [6 points] anInt after `cin >> anInt;`
`cin.get(aChar);`
`cin >> anInt;`

- | | | |
|-------|-------|------------------|
| 1) 1 | 4) 4 | 7) -46 |
| 2) 2 | 5) 9 | 8) 32 |
| 3) 12 | 6) 49 | 9) None of these |

7. [6 points] What is printed by the statement: `cout << "The answer is" << setw(3) << 30 + 12;`

- | | | |
|--------------------------|-------------------------|------------------|
| 1) The answer is 30 + 12 | 3) The answer is 42 | 5) None of these |
| 2) The answer is42 | 4) The answer is30 + 12 | |

8. [10 points] Given the declaration `int TestScore = 78;`, which of the output statements given below will produce the output:

```
1234567890
Score: 78
```

- | | |
|---|---------------------|
| 1) <code>cout << "1234567890" << endl</code>
<code><< "Score: " << TestScore << endl;</code> | 4) All of the above |
| 2) <code>cout << "1234567890" << endl</code>
<code><< "Score:" << " " << TestScore << endl;</code> | 5) 1 and 2 only |
| 3) <code>cout << "1234567890" << endl</code>
<code><< "Score:" << setw(4) << TestScore << endl;</code> | 6) 1 and 3 only |
| | 7) 2 and 3 only |
| | 8) None of these |

9. [12 points] Suppose that the input stream `cin` contains the IP address: `298.173.41.142`

Assuming that the variables `A` and `B` are declared as `ints`, which of the following code fragments will correctly read the second part of the IP address (173) into the variable `B`?

- | | | |
|---|---|-------------------|
| 1) <code>cin >> A;</code>
<code>cin.ignore(1, '.');</code>
<code>cin >> B;</code> | 3) <code>cin.ignore(4, '.');</code>
<code>cin >> B;</code> | |
| 2) <code>cin >> A;</code>
<code>char ch;</code>
<code>cin.get(ch);</code>
<code>cin >> B;</code> | 4) <code>cin.get(A);</code>
<code>cin.get(B);</code> | |
| 5) All of the above | 7) 1 and 2 only | 9) 2 and 3 only |
| 6) 1, 2 and 3 only | 8) 1 and 3 only | 10) None of these |

10. [12 points] A program specification says that a line of input will start with a text label containing up to 25 characters, followed by a tab character, followed by an integer value; for example:

```
Number of nodes:<tab>293<newline>
```

Here, <tab> and <newline> indicate the occurrence of a single tab character and a single newline character.

Given the specification, which of the following code fragments will successfully read the integer value into the `int` variable `NetSize`? Assume that `In` is an input file stream variable that has been opened on an input file, and that the data in the stream conforms to the specification.

- | | |
|---|---|
| 1) <code>In.ignore(25, '\t');</code>
<code>In >> NetSize;</code> | 3) <code>In.ignore(25, ':');</code>
<code>In >> NetSize;</code> |
| 2) <code>In.ignore(30, '\t');</code>
<code>In >> NetSize;</code> | 4) <code>In.ignore(50, '\t');</code>
<code>In >> NetSize;</code> |
| 5) All of the above
6) 1 and 2 only | 7) 2 and 4 only
8) 1, 2 and 3 only |
| | 9) 1, 2 and 4 only
10) None of these |

For questions 11 and 12, assume that the input file `Data.txt` consists of the following four lines:

```
1234567890
1234567890
1234567890
1234567890
```

11. [12 points] What output would the following code fragment produce?

```
ifstream In;
In.open("Data.txt");
char Value;
In.ignore(5, '\n');
In.get(Value);
cout << "Value: " << Value << endl;
```

- | | | |
|--|--|-----------------------------|
| 1) Value: 1
2) Value: 2
3) Value: 3
4) Value: 4 | 5) Value: 5
6) Value: 6
7) Value: 7
8) Value: 8 | 9) Value: 9
10) Value: 0 |
|--|--|-----------------------------|

12. [12 points] What output would the following code fragment produce?

```
ifstream In;
In.open("Data.txt");
char Value;
In.ignore(15, '0');
In >> Value;
cout << "Value: " << Value << endl;
```

- | | | |
|--|--|-----------------------------|
| 1) Value: 1
2) Value: 2
3) Value: 3
4) Value: 4 | 5) Value: 5
6) Value: 6
7) Value: 7
8) Value: 8 | 9) Value: 9
10) Value: 0 |
|--|--|-----------------------------|