

Chapter 2

Short Answer:

1. What are the two kinds of statements inside a function?
2. What is the name for a word that has a specific meaning in C++?
3. What is an identifier?
4. What would be the best choice for the data type for a person's middle initial?
5. What would be the best choice for the data type for the distance between two houses?
6. What is the following kind of statement called?
`int counter;`
7. What is a prompt?
8. What is the result of the following arithmetic expression?
 $5 + 7/3$
9. What is the result of the following arithmetic expression?
 $7 - 2 * (4 + 1)$

Chapter 3

Short Answer:

1. What is top-down design?
2. What is the output of this code, given the function definition that follows:
doSomething();
doSomething(); // code in main

void doSomething() { // function definition
 cout << "Hi";
 cout << "Bye";
}
3. In the function call
doesSomething (7, x, p);
what are 7, x and p called?
4. In the function definition
float aValue (int r, int s) {.....
what are r and s called?
5. In the function prototype
int calculation (float p);
int is called _____?
6. The program that you write to test a function is called a(n) _____.
7. The region in a program where a particular name is visible or can be referenced is called the name's _____.
8. What is the only type of function that does not have to end with a return statement?

Multiple Choice:

9. What is the value of x after the following code is executed?

```
y = 3.7;  
x = floor (y);
```

- a) 3
- b) 3.7
- c) 4
- d) 7

10. What is the output of this line of code, given the following definition?

```
cout << aNumber (2, 5);    // code in main
```

```
int aNumber (int x, int y) { // function definition  
    return (2 * x - y);  
}
```

- a) -6
- b) -1
- c) 6
- d) 8

11. What is the output of the following line of code, given the function definition that follows:

```
cout << calc (1, 2) + calc (2,3);    // code in main
```

```
int calc (int x, int y)           // function definition  
{  
    x = x + 1;  
    return x % y;  
}
```

- a) 0
- b) 1
- c) 2
- d) none of the above

12. What would be the output of the following lines of code?

```
string word = "somebody";  
cout << word.at(3);
```

- a) m
- b) e
- c) r
- d) d

13. What is the value of phrase after the following code executes?

```
string phrase = "A nice day", exes = "xxxx";  
phrase.replace(2, 3, exes);
```

- a) "A xxxxce day"
- b) "Axxxxice day"
- c) "A xxxxe day"
- d) "Axxxxce day"

Chapter 4

Short Answer:

1. Name the three control structures.
2. Write in C++ code:
score is between 50 and 60 inclusive
3. Write in C++ code:
y is equal to -5 or 5
4. What does “global” mean for a global constant?
5. What happens if you omit the word **break** in a switch statement?
6. What data types can the selector expression in the switch statement evaluate to?
7. What is the value of x after the following code segment executes, if y is 20 and z is 2?

```
switch (y - z)
{
    case 20: x = y + z; break;
    case 21: x = y; break;
    case 22: x = z; break;
    default: x = y * 2;
}
```

Multiple Choice:

8. Which of the following is **not** a relational operator:
 - a. <
 - b. >=
 - c. =
 - d. !=

9. Which of the following is equivalent to $(p \geq q)$

- a. $p < q$
- b. $!(p < q)$
- c. $p > q$
- d. $!p < q$

10. What is the output of the following code:

```
int r = 3, s = 2, t = 4;
if ((r == 4) || !(s < t))
    r = r - 1;
else
    r = r * 2;
r = r + t;
cout << r;
```

- a) 6
- b) 10
- c) 5
- d) 4

11. What is the output of the following code:

```
char ch = 'c';
if (ch > 'g')
    cout << "high";
else if (ch < 'm')
    cout << "low";
else
    cout << "middle";
```

- a) high
- b) low
- c) middle
- d) c

Chapter 5

Short Answer:

1. What is the part of the loop that contains the statements to be repeated called?
2. What is the output of the following code?

```
int a = 3, b = 2;  
int c = 0;  
while (c < 3)  
{  
    a = a + b;  
    cout << a << " ";  
    c = c + 1;  
}  
cout << b;
```
3. What are the three steps that must be done using the loop control variable?
4. What kind of loop would you have if the loop body is entered but the loop control variable is not updated?
5. What is the error in the following code if its purpose is to add five numbers entered by the user?

```
int x, sum;  
for ( int c = 0; c < 5; c++)  
{  
    cout << "Next number\n";  
    cin >> x;  
    sum = sum + x;  
}
```
6. What is the value of x after the following code segment?

```
int x = 5, y = 3;  
do  
{  
    x = x * 2;  
    y = y + 2;  
} while (y < 7);
```
7. What are the three loop structures in C++?

Chapter 6

Short Answer:

1. What kind of parameter do you use if you want a function to return more than one result?
2. What is the value of x after the following function call, given the function definition below?

```
int x;
aFunction (3, x);           //function call
```

```
void aFunction (int a, int &b)           //function definition
{
    b = a * 5 + 1;
}
```

3. When a function has a reference parameter, what is passed to a function's data area when the function is called?
4. What is the advantage of using value parameters?
5. Given the function prototype, what is wrong with the following function call?

```
void test (int, int&); //function prototype
```

```
test (a, &b);           //function call
```

6. Given the function prototype, what is wrong with the following function call?

```
float aFunction (int, int&, float); //function prototype
```

```
float y = aFunction (b, a + b, 3.7); //function call
```

7. If the call to the function arrange below puts the three integers a, b, and c in numerical order, write the function prototype for arrange.


```
arrange (a, b, c);           //function call
```
8. What is the name for a function with a heading but minimal body, used for testing the flow of control?

9. What is the name for the testing of the flow of control between main and its subordinate functions?

10. What is bottom-up testing?

11. What is the output of this function call given the function definition below?

```
cout << value (5, 3);           // function call

int value (int x, int y)       // function definition
{
    if (y == 1)
        return x;
    else
        return value (x+1, y - 1);
}
```

12. What will happen if you forget to write the & for a reference parameter?