**Section 3 Short Answer:**

1. What does a professional programmer usually do first to gain an understanding of the problem?

They will make a flowchart and then write pseudocode.

2. What is pseudocode?

Pseudocode is a universal language that allows you to write out a program and any person in any other programing language can look at pseudocode and figure out exactly what to do.

3. Computer programmers typically perform what three steps?

An input is received, then some process is performed on the input and then an output is produced

4. What does the term *user-friendly* mean?

The term user-friendly means that the user can easily use the program that you or another programmer have made.

5. What two things must you normally specify in a variable declaration?

You must specify the variables name and the data type

6. What value is stored in uninitialized variables?

Depending on the language it will either be 0 or a random number

**Section 4 Algorithm Workbench:**

1. Design an algorithm that prompts the user to enter his or her height and stores the user’s input in a variable named height.

Input Height

Display “here is your height:” , height

2. Design an algorithm that prompts the user to enter his or her favorite color and stores the user’s input in a variable named color.

Input favorite color  
Display “Here is your favorite color:” , color

3. Write assignment statements that perform the following operations with the variables a and b.

a. Adds 2 to a and stores the result in b

A + 2 = B

b. Multiplies b times 4 and stores the results in a

b \* 4 = a

c. Divides a by 3.14 and stores the result in b

a / 3.14 = b

d. Subtracts 8 from b and stores the reulst in a

b – 8 = a

4.Assume variables result, x, y and z are all integers and that x = 4, y = 8 and z = 2. What value will be stored in result in each of the following statements?

a. Set result = x + y

4 + 8 = 12

b. Set result = z \* 2

2 \* 2 = 4

c. Set result = y / x

8 / 4 = 2

d. Set result = y – z

8 – 2 = 6

5. Write pseudocode statement that declares the variable cost so it can hold real numbers.

Declare real cost

6. Write pseudocode statement that declares the variable total so it can hold an integer. Initialize the variable with the value of 0.

Declare real total = 0

7. Write pseudocode statement that assigns the value 27 to the variable count.

Declare variable count = 27

8. Write pseudocode statement that assigns the sum 10 and 14 to variable total.

Declare variable total = 24

9. Write pseudocode statement that subtracts the variable downPayment from the variable total and assigns the result to a the variable due.

Total – downPayment = due

10. Write pseudocode statement that multiplies the variable subtotal by 0.15 and assigns the result to the variable totalFee.

Subtotal \* 0.15 = totalFee

11. If the following where an actual program, what would it display?

Declare Integer a = 5

Declare Integer B = 2

Declare Integer C = 3

Declare Integer result

Set result = a + b \* c

Display result

This will equal 11

12. If the following pseudocode were an actual program, what would it display?

Declare Integer num = 99

Set num = 5

Display num

It will display the number 5