

## Intro to Programming: Ch. 3 Homework Project    Name:

### True/False (2 pts each)

Indicate whether the sentence or statement is true or false.

- F     1.     A sequence structure is also called a while.
- T     2.     When writing pseudo-code, the convention is to indent all the statements that depend on one branch of the decision.
- F     3.     In the flowchart process, it is not acceptable to perform multiple tasks after a question has an answer of "no."
- T     4.     A(n) structure is a basic unit of programming logic.
- F     5.     A(n) loop structure is also known as an if-then-else.
- T     6.     A(n) priming read is the first read or data input statement in a program.
- F     7.     The flowchart segment in Figure 2-21 is not structured.

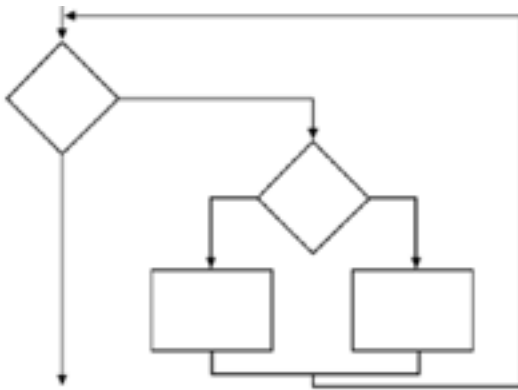


Figure 2-21 Example 2

- T     8.     The flowchart segment in Figure 2-22 is not structured.

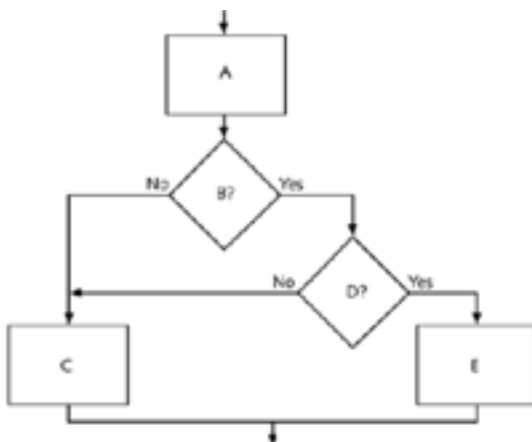
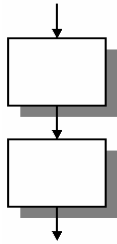
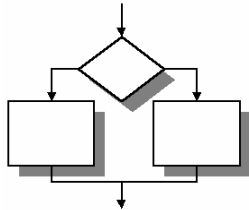


Figure 2-22 Example 3

T 9. This flowchart segment is a sequence.



F 10. This flowchart segment is an iteration.



**Multiple Choice (3 pts each)**

*Identify the letter of the choice that best completes the statement or answers the question.*

1. Programs that use C code logic are unstructured programs that do not follow the rules of structured logic.

- a. Case
- b. Loop
- c. spaghetti
- d. nested

2. With a(n) C, you perform an action or task, and then you perform the next action, in order.

- a. ordered structure
- b. sequence problem
- c. sequence structure
- d. loop sequence

3. The following pseudocode is an example of a A structure.

```
get firstNumber  
get secondNumber  
add firstNumber and secondNumber  
print result
```

- a. Sequence
- b. Decision
- c. loop
- d. nested

4. The following pseudocode is an example of a B structure.

```
if firstNumber is bigger than secondNumber then  
    print firstNumber  
else  
    print secondNumber
```

- a. sequence
- b. decision
- c. loop
- d. nested

5. Fill in the blank in the following pseudocode:

```
if someCondition is true then  
    do oneProcess
```

D

```
do theOtherProcess
```

- a. then
- b. while
- c. Do
- d. else

6. if-else examples can also be called D because they contain the action taken when the tested condition is true and the action taken when it is false.

- a. do loops
- b. single-alternative selections
- c. repetition
- d. dual-alternative selections

7. The following pseudocode is an example of a C structure.

```
get number
while number is positive
    add to sum
    get number
```

- a. sequence
- b. decision
- c. loop
- d. nested

8. You may hear programmers refer to looping as C.

- a. execution
- b. selection
- c. iteration
- d. case

9. The following pseudocode is an example of B.

```
do stepA
do stepB
if conditionC is true then
    do stepD
else
    do stepE
endif
while conditionF is true
    do stepG
endwhile
```

- a. nesting
- b. stacking
- c. single alternative structures
- d. a posttest

10. Attaching structures end to end is called B structures.

- a. linking
- b. stacking
- c. nesting
- d. building

11. The following pseudocode is an example of A.

```
if conditionA is true then
    do stepE
else
    do stepB
    do stepC
    do stepD
endif
```

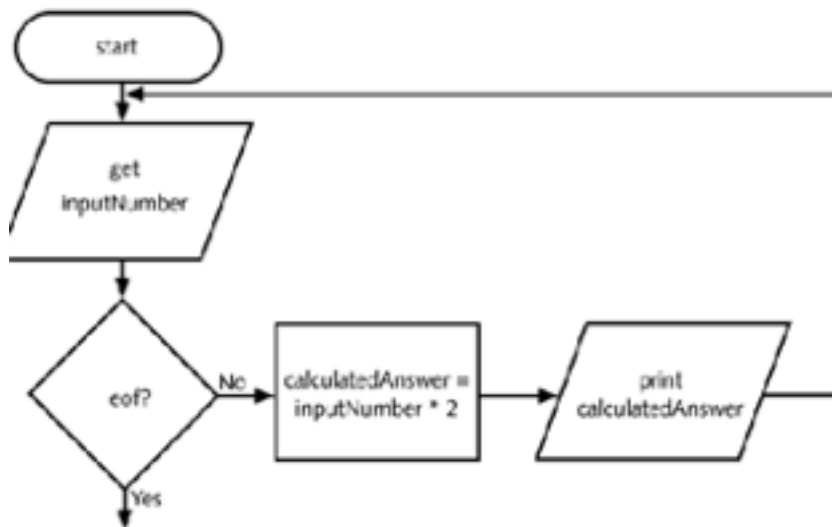
- a. nesting
- c. a posttest

- a. nesting
- b. stacking
- c. a posttest
- d. a pretest

12. Placing a structure within another structure is called A structures.

- a. nesting
- b. stacking
- c. shelling
- d. selecting

13. Which is true about the figure below?

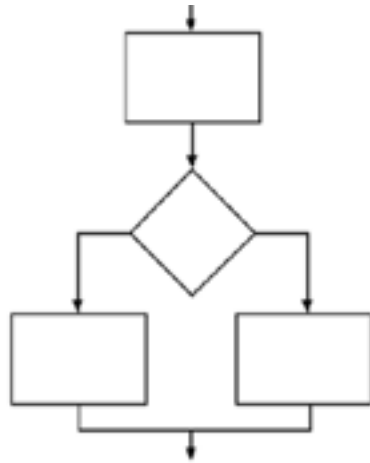


- a. The program logic is structured, but it doesn't work.
- b. The program logic is structured, and it works.
- c. The program logic is unstructured, and it doesn't work.
- d. **The program logic is unstructured, but it works.**

### Completion (3 pts each)

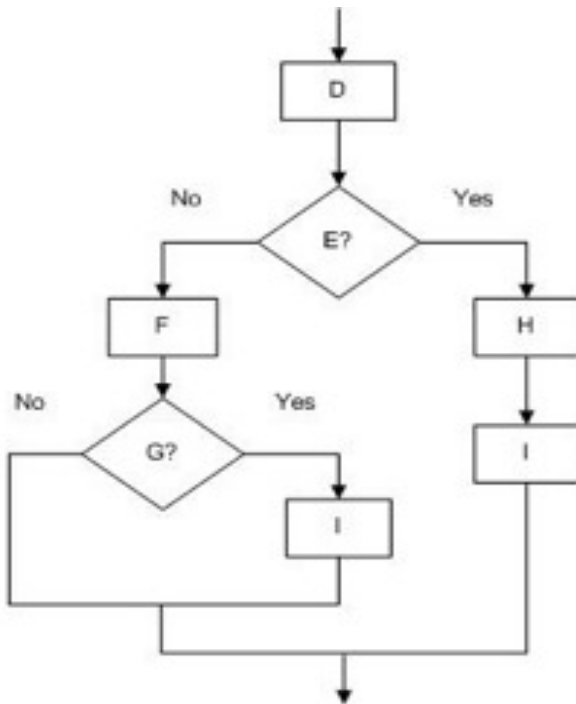
Complete each sentence or statement.

1. A(n) sequence can contain any number of tasks, but there is no option to branch off and skip any of the tasks.
2. Some people call the selection structure a(n) if statement.
3. A group of statements that execute as a single unit are called a(n) structure.
4. When you stack structures, the statements that start and end a structure are always on the same level and always in pairs.
5. List the structure(s) in the flowchart segment in the figure below.



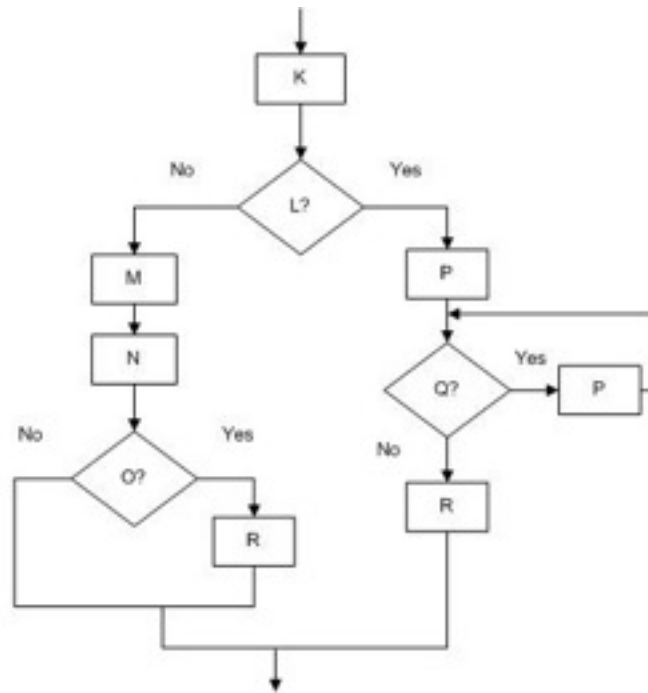
Decision

6. List the structure(s) in the flowchart segment in the figure below.



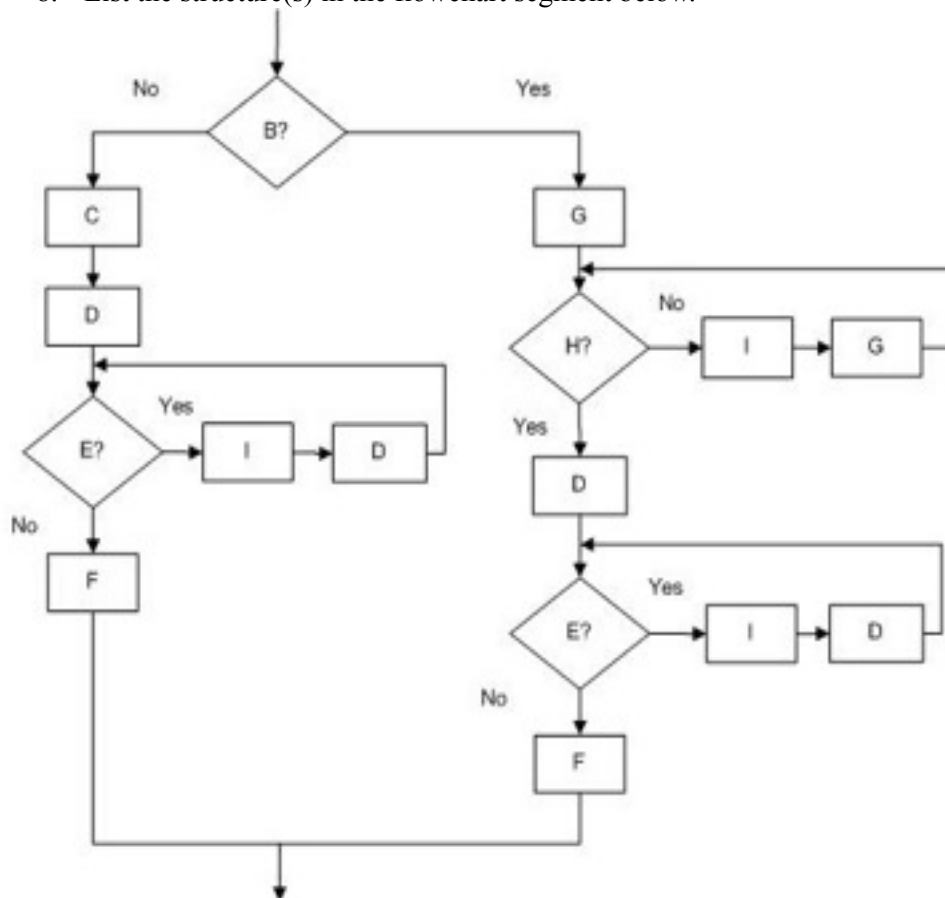
Decision, sequence

7. List the structure(s) in the flowchart segment below.



**Decision, loop, sequence**

8. List the structure(s) in the flowchart segment below.



## Loop, decision, sequence,

### Matching

- |                       |                       |
|-----------------------|-----------------------|
| a. structure          | e. Stacking           |
| b. priming read       | f. spaghetti code     |
| c. nesting            | g. loop structure     |
| d. decision structure | h. sequence structure |
- 
- |          |    |   |
|----------|----|---|
| <u>D</u> | 1. | ask a question, and, depending on the answer, you take one of two courses of action |
| <u>G</u> | 2. | continue to repeat actions based on the answer to a question                        |
| <u>A</u> | 3. | basic unit of programming logic   |
| <u>E</u> | 4. | attaching structures end-to-end   |
| <u>B</u> | 5. | statement that reads the first input data record                                    |
| <u>C</u> | 6. | Structure within a structure  |
| <u>H</u> | 7. | do step by step instructions  |
| <u>F</u> | 8. | logically snarled program statements  |

### Short Answer (10 pts each)

1. Write the pseudo-code for question 7 above.

```
start
do a
do b
do c
do d
end
```

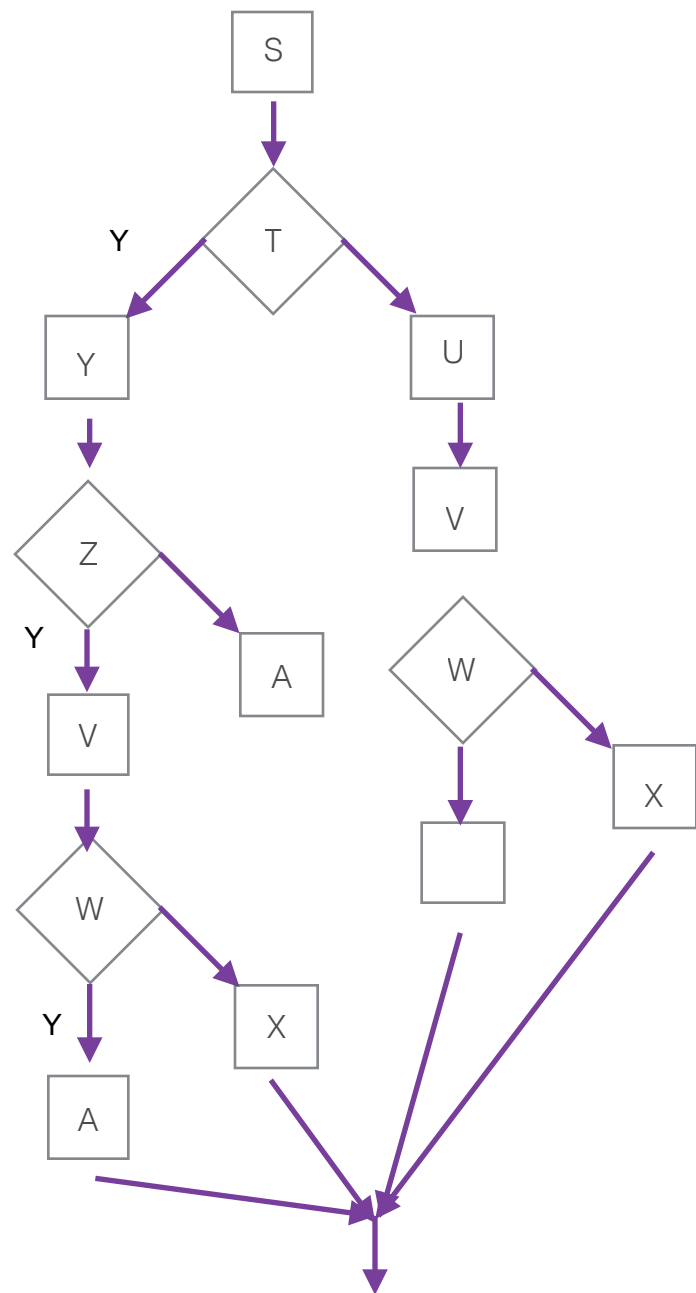
2. Draw the following flow chart

```
do S
  if T is true then
    do Y
      if Z is true then
        do V
          if W is true then
            do A
          else
            do X
          endif
        endif
      endif
    endif
  endif
```

```

else
    do A
endif
else
    do U
    do V
    if W is true then
        do A
    else
        do X
    endif
endif
endif

```



3.

Draw a structured flowchart or pseudo-code of your preparation to go to bed at night. Include at least 2 decisions and 2 loops.



```
start
if bedWarmerOff
    turnOnBedWarmer
flossTeeth
while teethNotBrushed
    brushTeeth
if enoughFluoride
    fluorideRinse
else
    findAndOpenNewBottle
while retainerNotClean
    brushRetainer
putInRetainer
goToBed
end
```