ch02

True/False
Indicate whether the statement is true or false.

____ 1. A computer program is considered to be a solution to a problem, but one that is implemented with a computer.

____ 2. The purpose of analyzing a problem is to determine the goal of solving the problem, and the items that are needed to achieve that goal.

____ 3. When analyzing a problem, you always search first for the input, and then for the output.

____ 4. When planning the algorithm, you must create both a flowchart and pseudocode.

____ 5. A problem can have more than one solution.

____ 6. Though you may have solved a problem similar to the one you are solving now, you should avoid using that problem's algorithm to solve the current problem.

____ 7. You can desk-check an algorithm using its pseudocode but not its flowchart.

____ 8. Most algorithms end with an instruction to print, display, or store the output items.

____ 9. Pseudocode is a standardized language for writing algorithms.

____ 10. It is a good practice to be consistent when referring to the input, output, and processing items in the IPO chart.

____ 11. The final step in the problem-solving process is to implement the program.

____ 12. As a programmer, it is important to distinguish between information that truly is missing in the problem specification, and information that simply is not stated, explicitly, in the problem specification.

____ 13. After the instruction to enter the input items, you usually provide instructions to process those items, typically by performing some calculations on them, to achieve the problem's required results.

____ 14. Let's say you have not solved a similar problem to the one you are working on and you cannot find a portion of an existing algorithm that you can use. You can reasonably conclude that not enough information is present in the problem specification for you to solve it.

____ 15. You can use a desk-check table to help you desk-check an algorithm. The table should contain one column for each input item shown in the IPO chart, but, to avoid confusion, should not contain any columns for the output items.

____ 16. The term "data-checking" means that you use pencil and paper, along with sample data, to walk through each of the steps in the algorithm manually, just as if you were the computer.

____ 17. When the programmer is satisfied that the algorithm is correct, he or she then translates the algorithm into a language that the computer can understand. Programmers refer to this step as tracing the algorithm.

____ 18. Most algorithms begin with an instruction that enters the input items into the computer.

____ 19. During the planning step, programmers write the steps that will transform the input into the output.

____ 20. As with the output, the input typically is stated as nouns and adjectives in the problem specification.

____ 21. Before you begin the desk-check, you first choose a set of sample data for the output values.

____ 22. Pseudocode is a tool programmers use to help them test an algorithm.

____ 23. Algorithms use standardized symbols to show the steps the computer needs to take to accomplish the program's goal.

____ 24. After analyzing the problem, you start planning an algorithm.

____ 25. Asymmetric data is data that the program is not expecting the user to enter.

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 26. The first step in solving a familiar problem is to ____ the problem.
a. minimize
b. analyze
c. deconstruct
d. transform

____ 27. Which of the following is the correct order of the problem solving process, from the first to the last?
a. review, plan, implement, modify, evaluate
b. review, plan, evaluate, implement, modify
c. plan, review, implement, evaluate, modify
d. plan, implement, evaluate, review, modify

____ 28. A coded algorithm is called a ____.
a. calculator
b. program
c. solution
d. processor

____ 29. Programmers refer to the goal as the ____, and the items needed to achieve the goal as the ____.
a. input, output
b. output, input
c. growth, seed
d. seed, growth

____ 30. An algorithm is ____.
a. a group of unrelated problems joined together to form a cluster
b. a complete analysis of the problem and the possible solutions
c. the necessary input for solving a problem
d. a set of step-by-step instructions that transforms the problem's input into its output

____ 31. A ____ item represents an intermediate value that the algorithm uses when transforming the input into the output.
a. temp
b. variable
c. processing
d. passover

____ 32. In programming terms, a numbered list of steps is called ____.
a. pseudocode
b. code
c. desk-checking
d. precode

____ 33. A(n) ____ uses symbols to show the steps the computer needs to take to accomplish the program's goal.
a. algorithm
b. hierarchy chart
c. diagram
d. flowchart

____ 34. The different symbols in a flowchart are connected with lines called ____.
a. connectors
b. markers
c. flowlines
d. pointers

____ 35. The oval symbol in a flowchart is called the ____ symbol.
a. start/stop
b. input/output
c. intermediary
d. terminal

____ 36. The rectangles in a flowchart are called ____ symbols.
a. intermediary
b. terminal
c. process
d. space

____ 37. You analyze the problem to determine the goal of solving the problem, that is, the ____.
a. input
b. algorithm
c. answer
d. output

____ 38. The input and output typically are stated as ____ and ___ in the problem specification.
a. nouns, adjectives
b. verbs, adjectives
c. adverbs, nouns
d. adverbs, verbs

____ 39. Programmers use a(n) _____ chart to organize and summarize the results of a problem analysis.
a. IPO
b. hierarchy
c. I/O
d. PPO

____ 40. The ____ step is the most difficult of the problem-solving steps, primarily because most problem specifications contain either too much information or too little information.
a. analysis
b. plan
c. review
d. implement

____ 41. Giving directions to someone, and writing down each direction on paper in your own words is an example of ____.
a. a flowchart
b. pseudocode
c. an IPO chart
d. an input

____ 42. The input/output symbol in a flowchart is represented by a ____.
a. circle
b. square
c. triangle
d. parallelogram

____ 43. ____ data is data that the programmer is expecting the user to enter.
a. Invalid
b. Valid
c. Symmetric
d. Asymmetric

____ 44. During the ____ step, programmers write the steps that will transform the input into the output.
a. modifying
b. planning
c. review
d. evaluate

____ 45. ____ refers to translating the algorithm into a language that the computer can understand.
a. Compiling
b. Loading
c. Coding
d. Debugging

____ 46. Before you begin the desk-check, you first choose a set of sample data for the ____ values.
a. input
b. processing
c. terminal
d. output

____ 47. You can draw an IPO chart by hand or by using the ____ feature in a Word processor.
a. IPO
b. chart
c. table
d. draw

____ 48. In response to the question “What is your hourly rate”, a user of a program enters $10,000. A good program should treat this as ____.
a. valid data
b. invalid data
c. unreasonable data
d. unethical data

____ 49. The question “What information will the computer need to know to print, display, or store the output items?” will help you determine the ____.
a. input
b. output
c. processing
d. algorithm

____ 50. Desk-checking, also called ____, means that you use pencil and paper, along with sample data, to walk through each of the steps in an algorithm manually, just as if you were the computer.
a. pencil pushing
b. hand-verification
c. table-top checking
d. hand-tracing

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Answer Section

TRUE/FALSE

1.	ANS: T	PTS: 1	REF: 39
2.	ANS: T	PTS: 1	REF: 40
3.	ANS: F	PTS: 1	REF: 40
4.	ANS: F	PTS: 1	REF: 46
5.	ANS: T	PTS: 1	REF: 46
6.	ANS: F	PTS: 1	REF: 46
7.	ANS: F	PTS: 1	REF: 49
8.	ANS: T	PTS: 1	REF: 44
9.	ANS: F	PTS: 1	REF: 45
10.	ANS: T	PTS: 1	REF: 45
11.	ANS: F	PTS: 1	REF: 40
12.	ANS: T	PTS: 1	REF: 42
13.	ANS: T	PTS: 1	REF: 43
14.	ANS: F	PTS: 1	REF: 48
15.	ANS: F	PTS: 1	REF: 49
16.	ANS: F	PTS: 1	REF: 40
17.	ANS: F	PTS: 1	REF: 40
18.	ANS: T	PTS: 1	REF: 43
19.	ANS: T	PTS: 1	REF: 54
20.	ANS: T	PTS: 1	REF: 41
21.	ANS: F	PTS: 1	REF: 49
22.	ANS: F	PTS: 1	REF: 45
23.	ANS: F	PTS: 1	REF: 45
24.	ANS: T	PTS: 1	REF: 43
25.	ANS: F	PTS: 1	REF: 51

MULTIPLE CHOICE

26.	ANS: B	PTS: 1	REF: 38
27.	ANS: C	PTS: 1	REF: 39
28.	ANS: B	PTS: 1	REF: 40
29.	ANS: B	PTS: 1	REF: 40
30.	ANS: D	PTS: 1	REF: 43
31.	ANS: C	PTS: 1	REF: 44
32.	ANS: A	PTS: 1	REF: 45
33.	ANS: D	PTS: 1	REF: 45
34.	ANS: C	PTS: 1	REF: 46
35.	ANS: A	PTS: 1	REF: 46
36.	ANS: C	PTS: 1	REF: 46
37.	ANS: D	PTS: 1	REF: 40
38.	ANS: A	PTS: 1	REF: 41

39.	ANS: A	PTS: 1	REF: 41
40.	ANS: A	PTS: 1	REF: 42
41.	ANS: B	PTS: 1	REF: 45
42.	ANS: D	PTS: 1	REF: 46
43.	ANS: B	PTS: 1	REF: 51
44.	ANS: B	PTS: 1	REF: 54
45.	ANS: C	PTS: 1	REF: 54
46.	ANS: A	PTS: 1	REF: 49
47.	ANS: C	PTS: 1	REF: 41
48.	ANS: B	PTS: 1	REF: 51
49.	ANS: A	PTS: 1	REF: 41
50.	ANS: D	PTS: 1	REF: 40