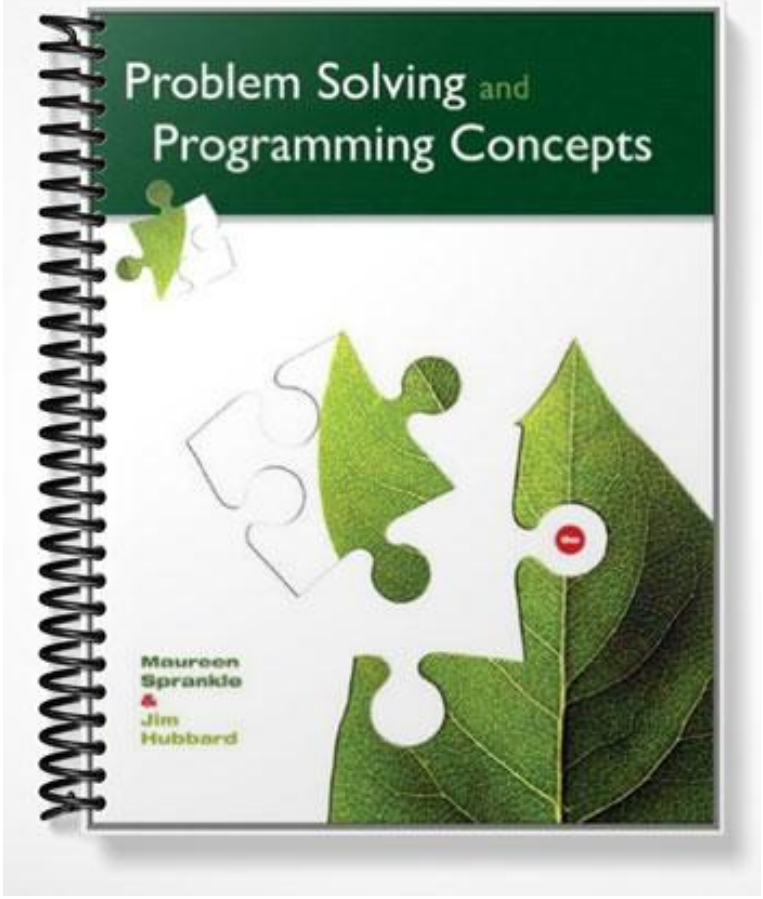
TEST BANK


Problem Solving and
Programming Concepts
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Test Bank
Problem Solving and Programming Concepts, 9th Ed.
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Unit One: Introduction to Problem Solving and Programming

Chapter 1: General Problem-Solving Concepts

True or False:

1.1. A heuristic and an algorithmic solution require the same type of problem solving to develop a step by step solution to a problem.
Answer: F

1.2. Identifying the problem is the first step in problem solving.
Answer: T

1.3. Defining the knowledge base is part of understanding the problem.
Answer: T

1.4. The result of a problem is a set of step by step instructions.
Answer: F

1.5. All problems can be solved by writing a set of step by step instructions for a computer.
Answer: F

1.6 It is not important to evaluate a solution.
Answer: F

1.7 The more alternative solutions that are identified, the better chance you have of a good solution.
Answer: T

1.8 Any solution should be considered when solving a problem.
Answer: F

1.9 You can find a step-by-step solution for any problem as long as you understand the problem.
Answer: F

1.10 Problems that require a heuristic solution cannot be solved through a set of step by step instructions.
Answer: T

Multiple Choice:

1.11. Step 3 in problem solving is to identify alternative ways to solve the problem. This means:
a. To define the knowledge base of all participants.
b. To write a list of pros and cons for each solution.
c. To identify as many solutions as possible to the problem.
d. To identify a few solutions to the problem.
Answer: C

1.12. The last step in problem solving is to evaluate the solution. This means:
a. To check if the knowledge base for errors.
b. To check if the set of step by step instructions developed in step 5, list instructions that enable you to solve the problem, solve the problem identified in step 1.
c. To check is the solution solves a problem.
d. To test for understanding of the identified problem.
Answer: B

1.13. An algorithm is:
a. A solution that can not be reached through a set of step by step instructions.
b. The results of the problem.
c. The set of step by step instructions to solve the problem.
d. The knowledge base of a solution.
Answer: C

1.14. Step 4 is to select the best way to solve the problem. This means:
a. To weed out unacceptable solutions.
b. To specify pros and cons of each valid solution.
c. Select one solution after weighing the pros and cons.
d. All of the above.
Answer: D

1.15. A problem that requires a heuristic solution might be:
a. Balancing your checkbook.
b. Choosing stock on the stock market.
c. A calculus problem.
d. Baking a cake.
Answer: B

1.16 The solution to a problem is
a. The set of step-by-step instructions to solve the problem.
b. The program
c. The results.
d. All of the above.
Answer: A

1.17. After you have identified alternative solutions
a. You are ready to evaluate the solution(s).
b. You are ready to select the best solution.
c. You are ready to write the algorithm.
d. You are ready to identify the knowledge base.
Answer: B

1.18. To select the best solution, you should
a. Identify and list the pros and cons of each alternative solution.
b. Develop an algorithm for each solution.
c. Develop the knowledge base for each solution.
d. Identify the problem.
Answer: A

1.19. To create a set of instructions to make Otto walk in a figure other than a square, the following instruction(s) would need to be added to the instruction set:
a. Turn 1 degree, turn is always right.
b. Turn x degrees, where x is a given number of degrees in an angle, turn is always right.
c. Turn x degrees, where x is a given number of degrees in an angle, turn is always left.
d. Any of the above.
Answer: D

1.20. A set of step-by-step instructions is processed:
a. In the order they are presented and processed.
b. Can skip around to other instructions.
c. Can return to a previously processed instruction.
d. In random order.
Answer: A

1.21. The set of step-by-step instructions written for the solution to a problem must:
a. Be within the knowledge base of the problem.
b. Can use any instruction, regardless of the user or the machine.
c. Does not have to be in order of processing.
d. All of the above.
Answer: A

1.22. To identify the best alternative solutions you should:
a. Use other people's ideas as well as your own.
b. Use only your own ideas.
c. Use any solution, no matter how unacceptable it is.
d. Identify only the first few that you think about.
Answer: A

1.23. When writing a set of instructions for the computer:
a. The instructions must be in proper order.
b. The instructions must be complete.
c. The instructions assume the computer knows nothing.
d. All of the above.
Answer: D

1.24. A problem that would require an algorithmic solution is:
a. Playing a game of chess.
b. Making a cup of cocoa.
c. Deciding which stock to buy.
d. All of the above.
Answer: B

1.25. Computers can best deal with problems that require:
a. Large amounts of calculations.
b. Reasoning.
c. Trial and error.
d. All of the above.
Answer: A

Chapter 2: Beginning Problem-Solving Concepts for the Computer

True or False:

2.1. Numerical data includes all integer numbers and all real numbers.
Answer: T

2.2. Character data includes all numerical data.
Answer: F

2.3. True (T, y, or yes) and False (F, n, or no) are the only values in the logical data set.
Answer: T

2.4. An equation and an expression are the same thing.
Answer: F

2.5. A function is a set of instructions to input data into the computer.
Answer: F

2.6. The hierarchy of operations identifies the order in which the operators are executed.
Answer: T

2.7. The NOT operator reverses the operand.
Answer: T

2.8. The = operator is mathematical operator.
Answer: F

2.9 The = sign is an operator as well as part of an assignment statement.
Answer: T

2.10. A parameter is the data required to process an assignment statement.
Answer: F

Multiple Choice:

2.11. A variable:
a. Is stored in a named memory location.
b. Can be changed while a solution is being executed.
c. Is given a specific data type.
d. All of the above.
Answer: D

2.12. String data:
a. Is group of characters.
b. Can be used to calculate expressions.
c. Contains all other data types.
d. Does not use quotes around the characters.
Answer: A

2.13. In the following expression, what is the order of execution of the operators and the result, given A = 4, B = 5, E = 3, G = True, F = True?
A * B + 7 > E ^ 3 OR NOT G AND F
a. *, +, >, ^, NOT, AND : Result is True
b. AND, NOT, >, ^, *, +, : Result is False
c. ^, *, +, >, NOT, AND, OR : Result is True
d. ^, *, +, >, NOT, AND, OR : Result is False
Answer: C

2.14. Evaluate the following equation for R, given A = 4, B = 5, C = 8 is:
R = A + B * 2 – (C + 4) / A
a. 11
b. 10
c. 12
d. 15
Answer: A

2.15. In the equation: R = A + B * 2 – (C + 4) / A, the operands are:
a. +, *, -, /
b. A, B, C
c. R
d. =
Answer: B

2.16. An ideal variable name for a client name is:
a. C
b. Cli
c. Client_name
d. CN
Answer: c

2.17. The concatenation of "4" and "10" is:
a. 410.
b. "410"
c. 40.
d. "40".
Answer: B

2.18. The data type of a parameter may be:
a. a constant.
b. a variable.
c. an expression.
d. all of the above.
Answer: D

2.19. In the expression 4 + 10, the operand(s)
a. are the 4 and the 10.
b. is the +.
c. is 14.
d. none of the above.
Answer: A

2.20. In the function LEFT(S,3), the parameter(s):
a. Is LEFT.
b. Are S and 3.
c. Is S.
d. Is 3.
Answer: B

2.21. Mathematical operators include among others:
a. +, -, =
b. >, *, /
c. NOT, MOD, \
d. MOD, *, ^
Answer: D

2.22. The resultant of A OR B
a. Is always true.
b. Is always false.
c. Is always true except when A and B are both false.
d. Is always false except when A and B are both false.
Answer: C

2.23. If the operands are both numerical, and the operator is relational, the data type of the resultant is:
a. Numerical.
b. Relational.
c. Logical.
d. None of the above.
Answer: B

2.24. In the following equation under what conditions would PriorityUse be True?
PriorityUse = (ValidCard AND TimeNoted) OR (Computer AND GuestCard)
a. ValidCard is True, TimeNoted is True, Computer is True, GuestCard is False.
b. ValidCard is False, TimeNoted is True, Computer is False, GuestCard is True.
c. ValidCard is True, TimeNoted is False, Computer is True, GuestCard is False.
d. All of the above.
Answer: D.

2.25. The data type of ZipCodes:
a. Must always be numeric data.
b. Must always be string data.
c. Can be either numeric or string data.
d. None of the above.
Answer: B