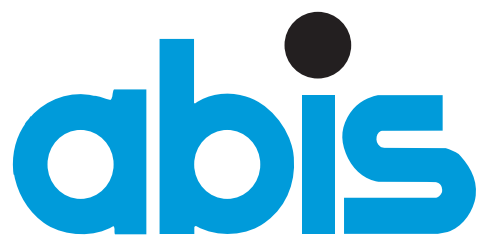


Self-test Programming Fundamentals

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The logo for ABIS Training & Consulting. The word "abis" is written in a bold, blue, lowercase sans-serif font. A solid black circle is positioned above the letter 'i'. Below the text is a thick, horizontal grey bar.

TRAINING & CONSULTING

INTRODUCTION TO THE SELF-TEST PROGRAMMING FUNDAMENTALS

This test consists of multiple-choice questions and one open question. With some questions, the correct answer contains several alternatives (as indicated). Write down your answer(s) and compare with the given solutions.

QUESTIONS SELF-TEST PROGRAMMING FUNDAMENTALS

1. Which of the following are object oriented languages? *[3 answers]*
 - [a] Java
 - [b] COBOL
 - [c] Python
 - [d] C++
 - [e] C

2. In programming, a series of logically ordered steps that lead to a required result is called
 - (a) a compiler
 - (b) a program
 - (c) a data structure
 - (d) an algorithm

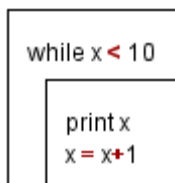
3. What kind of languages are COBOL, Java, C# and Basic?
 - (a) 1GL
 - (b) 2GL
 - (c) 3GL
 - (d) 4GL

4. Which is a typical language for programming inside Web pages?
 - (a) JavaScript
 - (b) HTML
 - (c) COBOL
 - (d) XML

5. Which of the following converts source code into machine code at each runtime?
 - (a) linker
 - (b) compiler
 - (c) interpreter
 - (d) object encoder

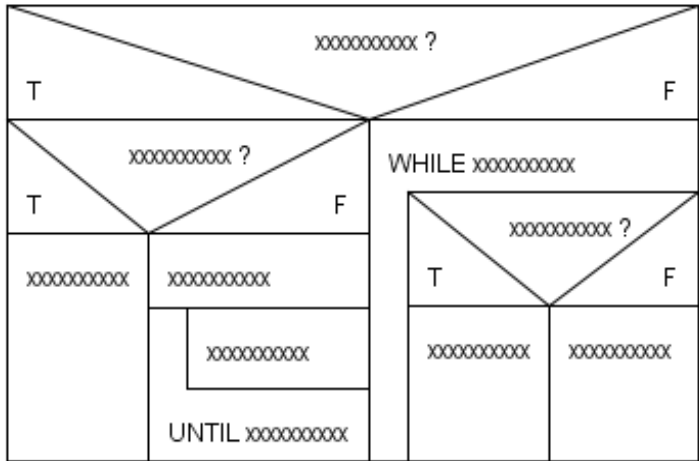
6. Which of the following commonly happens to variables (in most languages)? *[3 answers]*
- [a] declaration
 - [b] assignment
 - [c] expansion
 - [d] initialization
 - [e] derivation
7. Assuming that + and * are arithmetic operators (addition and multiplication), to what does the expression $2 + 4 * 5 + 1$ evaluate?
- Answer:
8. Assuming that = and / are the assignment and division operators, what will be the outcome of the following code in most programming languages:
- ```
x = 3
y = 7
z = x / (y-7)
```
- (a) a runtime error
  - (b) a syntax error
  - (c) a logic error
  - (d) a compiler error
9. Today is Tuesday. It is raining.  
Which of the following is True? *[2 answers]*
- [a] Raining OR Tuesday
  - [b] Raining XOR Tuesday
  - [c] Raining AND Tuesday
  - [d] NOT (Raining OR Tuesday)
10. Which is a typical kind of variable for keeping an ordered set of values in memory, that can be referenced as e.g. A[3], A[n+1] etc. ?
- (a) file
  - (b) array
  - (c) string
  - (d) container

11. AND, OR and NOT are logical operators. What data type is expected for their operands?
- (a) integer
  - (b) boolean
  - (c) decimal
  - (d) character
12. In many programming languages, 'otherwise' or 'else' are part of which building block?
- (a) a loop
  - (b) a counter
  - (c) a selection
  - (d) a list structure
13. What building block does the following Nassi-Shneiderman diagram represent?



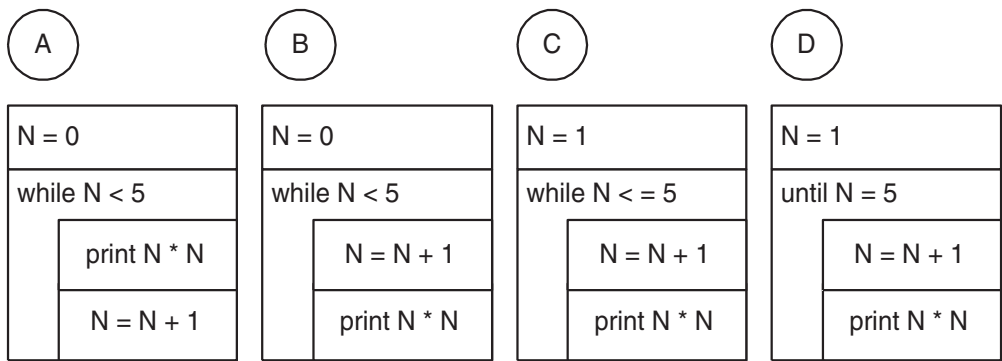
- (a) a sequence
- (b) a selection
- (c) an iteration
- (d) a function

14. Structurally the following is a typical example of ...



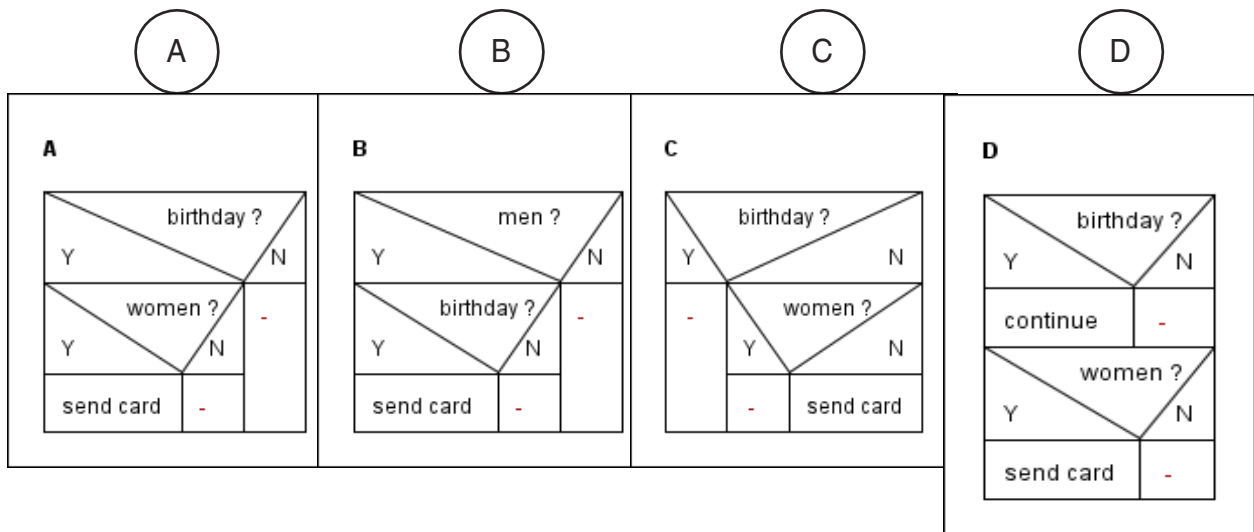
- (a) tracing
- (b) recursion
- (c) hatching
- (d) nesting

15. Which is a working solution for producing the following output: 1 4 9 16 25 ?



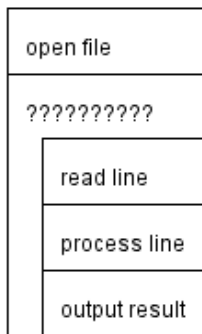
- (a) A
- (b) B
- (c) C
- (d) D

16. Assume a random population. You want to send a birthday card to all women that have a birthday next week. Which is a correct and probably most efficient algorithm?



- (a) A
- (b) B
- (c) C
- (d) D

17. The following is a typical pattern for reading and processing data from a sequential file. What is hidden behind the question marks? [2 possible answers, independent from each other]



- [a] while not EOF
- [b] if count = end
- [c] until EOF
- [d] count until end

18. (In most programming languages), which statement would be used in the definition of a function, to indicate the resulting value when this function is called?
- (a) result = x
  - (b) reply x
  - (c) send x
  - (d) return x
19. 'Tracing', 'stepping' and 'breakpoint' are typical terms belonging to which programming development aspect?
- (a) debugging
  - (b) compilation
  - (c) version control
  - (d) project planning
20. Which term describes the mechanism of a function calling itself ?
- (a) encapsulation
  - (b) inheritance
  - (c) recursion
  - (d) polymorphism



# EVALUATION.

Here are the correct answers to all questions:

1. a c d
2. d
3. c
4. a
5. c
6. a b d
7. 23
8. a
9. a c
10. b
11. b
12. c
13. c
14. d
15. b
16. a
17. a c
18. d
19. a
20. c

Give 1 point per correctly answered question, also for questions with multiple correct answers.

If your score is more than 80%, you do not have to follow the course [Programming fundamentals](#).

When you have a score between 50% and 80%, following the course [Programming fundamentals](#) can improve your knowledge.

When your score is less than 50%, we strongly suggest you follow the course [Programming fundamentals](#).