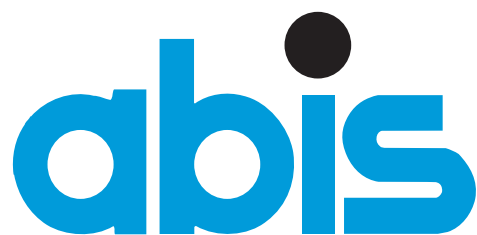


Selftest PL/1 programming

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INTRODUCTION TO THE SELFTEST PL/1 PROGRAMMING

In order to get a reasonable indication for the prerequisites for the course [PL/1 programming](#) the following questionnaire might help to check your personal knowledge of the various topics discussed in this courses.

In this test, 20 questions are asked. For most questions, there is only one answer possible. If multiple answers are possible, it will be clearly indicated. The question is answered correctly, if and only if all correct answers are given.

There are no real trick questions (at least not intentional) but read question and answer attentively.

You must take into account that this test will take you about 15 minutes.

You can find the right answers and guidelines for the evaluation at the end of this document.

QUESTIONS SELFTEST PL/1 PROGRAMMING

1. Which of the following statements about PL/1 programs are TRUE? (2 answers)

- [a] a program must always begin with a PROCEDURE statement and end with an END statement
- [b] PL/1 instructions can be coded between positions 1 and 72
- [c] you have to declare each variable that you are going to use
- [d] a program can be composed out of different procedures
- [e] comment lines have to be preceded by //

2. A PL/1 programmer wants to repeat an instruction 5 times. How can he/she code this?

(a)

```
REPEAT 5 TIMES;  
    instruction;  
END;
```

(b)

```
DO J=1 TO 5;  
    instruction;  
END;
```

(c)

```
COUNTER = 1;  
DO WHILE COUNTER < 5;  
    COUNTER = COUNTER + 1;  
    instruction;  
END;
```

(d)

```
REPEAT VARYING COUNTER FROM 1 BY 1 UNTIL COUNTER = 5;  
    instruction;  
END;
```

3. Which of the following names of variables for data items are syntactically correct? (2 answers)

- [a] READ
- [b] RECORD-IN
- [c] @_RECORD
- [d] IN/OUTRECORD
- [e] 1_TELEPHONE

4. Where in a PL/1 program are you obliged to code a ; (**semi colon**) ? (3 answers)
- [a] after each declaration of a variable
 - [b] at the end of each instruction
 - [c] to end a DO instruction
 - [d] at the end of the program
 - [e] to end an IF instruction
5. Assume a PL/1 program that wants to execute a call to an external procedure. This procedure expects 1 parameter and returns 1 parameter. Which instructions do you have to provide in the main program? [3 answers]
- [a] `DCL MYSUB ENTRY (CHAR(5)) EXTERNAL;`
 - [b] `DCL MYSUB ENTRY (CHAR(5)) RETURNS (CHAR(5)) EXTERNAL;`
 - [c] `DCL MYPARAMETER,MYRESULT CHAR(5);`
 - [d] `CALL MYSUB (MYPARAMETER);`
 - [e] `MYRESULT = MYSUB;`
 - [f] `MYRESULT = MYSUB(MYPARAMETER);`

6. Take a look at the following PL/1 program. Assume A, B, C, ... being PL/1 instructions. In which order will they be executed?

```
MYPROG : PROCEDURE OPTIONS (MAIN);
    CALL INIT;
    Z;
    CALL TERM;
    Z;
END MYPROG;

INIT : PROCEDURE;
    A;
    B;
    CALL READ-X;

LOOP : PROCEDURE;
    E;
    F;

TERM : PROCEDURE;
    G;
    H;

READ-X : PROCEDURE.
    X;
```

- (a) A B Z E F Z X
- (b) A B X Z E F G H Z X
- (c) A B X Z E F Z G H Z
- (d) A B X Z G H Z
7. Take a look at the following calculation. Taking in account the rules for priority, how will this calculation will be executed?

$A ** 2 * B / 2 + c - 5$

- (a) $((A ** 2) * B) / 2 + c - 5$
- (b) $((A ** 2) * (B / 2)) + c - 5$
- (c) $(A ** 2) * (B / (2 + c)) - 5$
- (d) $((A ** (2 * B)) / 2) + c - 5$

8. A PL/1 programmer wants to display a number in his/her program. Which of the following variables is suited for doing this?

+123.45

(we assume the decimal sign is '.')

- (a) PIC '(5)9'
 - (b) PIC 'S(3)9V.99'
 - (c) PIC 'S999.99'
 - (d) PIC '999V99'
9. If you have the following declarations, what will be the content of RESULT at the end of the given instructions?

```
DCL 1 VAR1      CHAR(5) INIT ('PL/1');
DCL 1 VAR2      CHAR(10);
DCL 1 VAR3      CHAR (2);
DCL 1 RESULT    CHAR (5);
```

```
RESULT = 'COBOL';
VAR2 = VAR1;
VAR3 = VAR2;
RESULT = VAR3;
```

- (a) PLbbb (bbb = 3 blanks)
 - (b) COBOL
 - (c) COBPL
 - (d) PLBOL
10. Take a look at the following PL/1 variables. Which of the given conditions is NOT correct?

```
DCL  INFILE  FILE RECORD INPUT;
DCL  EOF     BIT(1)  INIT ('0'B);
```

```
ON ENDFILE (INFILE)
  EOF = '1'B;
```

- (a) DO WHILE (NOT EOF);
- (b) DO WHILE (^EOF);
- (c) DO WHILE (EOF = '0'B);
- (d) DO WHILE (EOF ^= '1'B);

11. Which of the following definitions can be used in the description of a sequential file that will be used directly as INPUT (2 answers)?

- [a] CHAR (9)
- [b] BIN FIXED (4)
- [c] PIC '(4)Z'
- [d] PIC '9999V99'
- [e] PIC '9999V.99'

12. Which of the following PL/1 SELECT statements is correct?

(a)

```
SELECT (A);  
    WHEN (A=0)      PUT LIST('A = 0');  
    WHEN (A=5)      PUT LIST ('A = 5');  
    OTHERWISE       PUT LIST ('A IS NOT 0 NOR 5');  
END;
```

(b)

```
SELECT (A);  
    WHEN (0)        PUT LIST('A = 0');  
    WHEN (5)        PUT LIST ('A = 5');  
    OTHERWISE       PUT LIST ('A IS NOT 0 NOR 5');  
END;
```

(c)

```
SELECT;  
    WHEN (A=0)      PUT LIST('A = 0');  
    WHEN (5)        PUT LIST ('A = 5');  
    OTHERWISE       PUT LIST ('A IS NOT 0 NOR 5');  
END;
```

13. Which of the following declarations of variables are correct? (2 answers)

- [a] DCL VAR_4, CHAR;
- [b] DCL VAR_1 CHAR(32800);
- [c] DCL (VAR_7, VAR_8) CHAR(4);
- [d] DCL CHAR(4);

14. Analyse the following PL/1 instruction. When will PAR_3 be executed?

```
IF A=B THEN
  PAR_1;
ELSE
  PAR_2;
  PAR_3;
```

- (a) never
- (b) if A and B are equal
- (c) if A and B are not equal
- (d) always

15. Which of the following statements about PL/1 arrays is TRUE?

- (a) multidimensional arrays are allowed. The maximum number of dimensions is 15.
- (b) the elements in an array can only be of the numeric datatype
- (c) a reference towards an element in an array is done by means of a subscript. The first occurrence of an element in an array has subscript 0.
- (d) arrays are used to read in DB2 tables.

16. For each file you want to read in a PL/1 program you have to code a set of declarations and/or instructions. In what order do they have to be executed?

```
(1) DCL infile FILE RECORD INPU
(2) READ FILE (infile)
(3) OPEN FILE (infile)
(4) CLOSE FILE (infile)
```

- (a) 3, 1, 2, 4
- (b) 1, 3, 2, 4
- (c) 1, 2, 3, 4
- (d) 3, 2, 1, 4

17. What will be the content of RESULT after the execution of the following PL/1 instruction? The start value of RESULT is 0.

```
RESULT = 0;
DO C=1 BY 1 UNTIL (C=10);
    RESULT = RESULT + 1;
END;
```

Answer:

18. What is the difference between a PL/1 BEGIN block and a PROCEDURE block?
- (a) a PROCEDURE block is only activated when it is called by means of a CALL instruction; a BEGIN block is always executed
 - (b) a variable declared in a BEGIN block can be referenced throughout the complete PL/1 program; for PROCEDURE blocks the scope is limited to the PROCEDURE itself
 - (c) you can leave a BEGIN block by means of an END instruction; a PROCEDURE block can be left by means of a RETURN instruction
19. Which of the following array declarations is NOT correct?
- (a) DCL ARRAY_1 DEC FIXED (3)(5,2);
 - (b) DCL ARRAY_1 (5,2) DEC FIXED (3);
 - (c) DCL ARRAY_1 (5) DEC FIXED (3), (2) DEC FIXED (3);
 - (d) DCL (5,2) ARRAY_1 DEC FIXED (3);
20. Assume that you read in a variable in a PL/1 program directly using stream input. Take a look at the following declarations and the GET instruction. How must the INPUT stream look like?

```
DCL NUM_1 DEC FIXED (5,2);
DCL NUM_2 DEC FIXED (5,2);
DCL AN_1 CHAR(6);
```

```
GET EDIT (NUM_1,NUM_2,AN_1) (COL(1),F(5,2),COL(10),F(5,2),COL(20),A(6));
```

```

      1---5---0---5---0---5---0---5---0---5---0---5
(1) 1254   1200   ABCDE
(2) 12.54  12.00  ABCDE
(3) 1254   1200   'ABCDE'
```

- (a) 1
- (b) 2
- (c) 3
- (d) all three are OK

EVALUATION.

Here are the correct answers to all questions:

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

Give yourself 1 point for each correctly answered question (for multiple answer questions, this means that all correct answers must be marked).

If you answered less than 50% of the questions correctly, please follow the course [PL/1 programming](#).

If you answered between 50% and 80% of the questions correctly, you know already some concepts, but you will still learn a lot in the course [PL/1 programming](#).

If you answered more than 80% correctly, then this course is not useful for you any more.