

- 1) **Domain integrity is implemented through:**
  - A) foreign key
  - B) primary key
  - C) primary and foreign key
  - D) transaction key
  - E) none of the previous answers A, B, C, D is correct
  
- 2) **Referential integrity is defined through the SQL statement:**
  - A) CREATE DOMAIN INTEGRITY
  - B) CREATE TABLE
  - C) CREATE DATABASE INTEGRITY
  - D) CREATE INTEGRITY
  - E) none of the previous answers A, B, C, D is correct
  
- 3) **Design patterns technique is about:**
  - A) Database tables.
  - B) Distributed computing.
  - C) Reusable solution to programming problems.
  - D) Application development in the machine-level languages.
  - E) none of the previous answers A, B, C, D is correct.
  
- 4) **The object inheritance enables:**
  - A) Sharing data among objects.
  - B) Sharing methods among objects.
  - C) Sharing interfaces among objects.
  - D) Mechanism of data transfer between objects and the external environment.
  - E) none of the previous answers A, B, C, D is correct.
  
- 5) **In Unix operating system the access rights to a file or to a directory can be set:**
  - A) only by the superuser
  - B) only by its owner and by those users who are members of the same group as the owner
  - C) only by those users who have rights *r*, *w*, *x* to the file or the directory
  - D) only by its owner or the superuser
  - E) none of the previous answers A, B, C, D is correct
  
- 6) **In Unix s-bits are used**
  - A) for controlled transfer of access rights
  - B) for process priority change
  - C) to increase process security
  - D) to run process on the background
  - E) none of the previous answers A, B, C, D is correct
  
- 7) **Subtype in C# is:**
  - A) a class placed in another source code file than the rest of the classes
  - B) a class derived from another class in inheritance
  - C) a system class
  - D) a base class in inheritance
  - E) none of the previous answers A, B, C, D is correct

**8) Interface in C# is:**

- A) a graphical user interface
- B) a set of method and property definitions usable during class definition
- C) any instance of a system class
- D) any class with name ending „Exception“
- E) none of the previous answers A, B, C, D is correct

**9) eDirectory is:**

- A) cross-platform directory service from Apple
- B) cross-platform directory service from Google
- C) cross-platform directory service from Microsoft
- D) cross-platform directory service from HP
- E) none of the previous answers A, B, C, D is correct

**10) Hierarchically layered architecture:**

- A) lowest layer (0) is firmware
- B) lowest layer (0) is user interface
- C) lowest layer (0) is command line
- D) lowest layer (0) is shell (command interpreter)
- E) none of the previous answers A, B, C, D is correct

**11) Process in the Data flow diagram must have:**

- A) A data flow to at least one terminator.
- B) Terminator connected to input and output.
- C) Clearly specified set of attributes.
- D) At least one input data flow and at least one output data flow.
- E) none of the previous answers A, B, C, D is correct

**12) What is cardinality in the Entity Relationship Diagram?**

- A) A situation when relationship of entities is impossible.
- B) Instrument for describing a data structure of entities.
- C) The way for expressing quantitative aspects of the relationship.
- D) Deviation from the 1st normal form.
- E) none of the previous answers A, B, C, D is correct

**13) Command P will be processed:**

- A) never
- B) 5x
- C) 6x
- D) 7x
- E) none of the previous answers A, B, C, D is correct

a=0
b=10
a<b and b<5
a=a+1
b=b-1
<b>P</b>

**14) Result of recursive algorithm Recursion(-1) is:**

- A) 8
- B) 4
- C) 2
- D) 1
- E) none of the previous answers A, B, C, D is correct

Recursion(b)	
b>1 or b>0	
+	-
return Recursion(b+1)-b	return 2

**15) For structure LIFO is characteristic:**

- A) last inserted element is removed as first
- B) first inserted element is removed as first
- C) it is not possible to determine which element is removed from the list as the first
- D) last inserted element is removed as last
- E) none of the previous answers A, B, C, D is correct

**16) Condition „ $((5>2) \parallel (b>a))$ “:**

- A) cannot be evaluated without knowledge of values a and b
- B) result is true
- C) is not valid condition
- D) result is false
- E) none of the previous answers A, B, C, D is correct

**17) We have a number  $X = (147,625)_{10}$  in a decimal numeral system. In a binary numeral system a value of the X number is:**

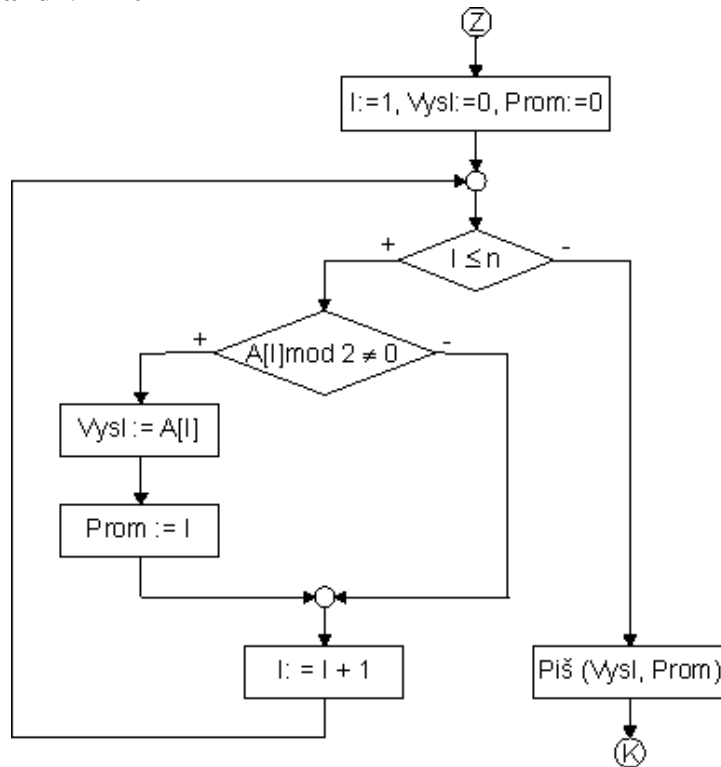
- A) This number cannot be represented in binary numeral system
- B)  $(110010101,1110111)_2$
- C)  $(101,1001011)_2$
- D)  $(10010011,101)_2$
- E) none of the previous answers A, B, C, D is correct

**18) We have a logic circuit with inputs  $s_1$  and  $s_2$  and outputs  $y_0, y_1, y_2, y_3$ . In the table below there is a description of circuit behaviour. The circuit is:**

$s_1$	$s_0$	$y_3$	$y_2$	$y_1$	$y_0$
0	0	0	0	0	1
0	1	0	0	1	0
1	0	0	1	0	0
1	1	1	0	0	0

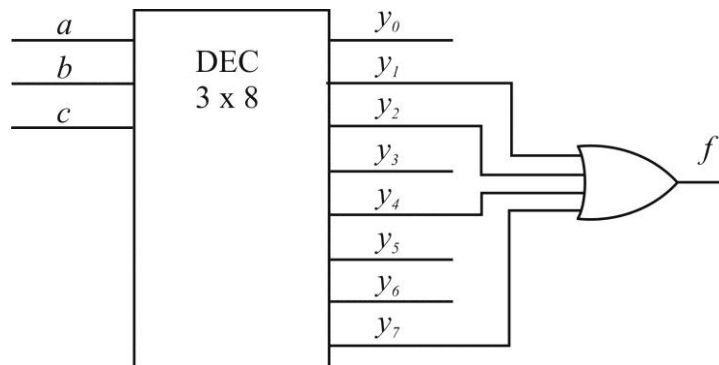
- A) a 2-bit arithmetic adder
- B) decoder 2x4
- C) sequential J-K circuit
- D) multiplexer 4x1
- E) none of the previous answers A, B, C, D is correct

- 19) What value will be in variables *Vysl* and *Prom* after execution of this algorithm if these values 12, 32, 53, 2, 5, 70, 69, 18, 46, 102 are saved in the array A ( $A[1]$ ,  $A[2]$ , ...,  $A[n]$ ) and  $n = 10$



- A)  $Prom = 7, Vysl = 69$   
 B)  $Prom = 10, Vysl = 102$   
 C)  $Prom = 10, Vysl = 69$   
 D) The result of this algorithm cannot be determined  
 E) none of the previous answers A, B, C, D is correct

- 20) Boolean function  $f$  is realized by a circuit with decoder (DEC) and OR gate (see picture). The function is described by an expression:



- A)  $f = a \cdot b \cdot c$   
 B)  $f = a \rightarrow b \rightarrow c$   
 C)  $f = a \oplus b \oplus c$   
 D)  $f = a + b + c$   
 E) none of the previous answers A, B, C, D is correct

## Řešení

otázka	
<b>1</b>	E
<b>2</b>	B
<b>3</b>	C
<b>4</b>	B
<b>5</b>	D
<b>6</b>	A
<b>7</b>	B
<b>8</b>	B
<b>9</b>	E
<b>10</b>	E
<b>11</b>	D
<b>12</b>	C
<b>13</b>	A
<b>14</b>	C
<b>15</b>	A
<b>16</b>	B
<b>17</b>	D
<b>18</b>	B
<b>19</b>	A
<b>20</b>	C