

Discipline *Computer programming*

Questions for the Periodic Evaluation No 1 (EP1)

sem.1, a. a 2023-2024

gr. FAF-231, FAF-232, FAF-233

1. Computer Programming Discipline. The term of an algorithm. Forms of the algorithm representation
2. Graphic symbols for operations. Flowchart of the algorithm
3. Structure of the program in C language. Structure of the **main ()** function
4. The **scanf ()** and **printf ()** functions for input and output operations. Format specifiers
5. Algorithms with linear structure and branched structure. Conditional statements **if, if-else, if-else if ...else if-else** and selection statement **switch**
6. Algorithms of iterative (loop) structure. Preconditional and postconditional loops. Loop statements **while, for, do-while**
7. Algorithms of iterative (loop) structure. Event and counter controlled loops. Examples.
8. Algorithms with loop-in-a loop structure (nested loops). Statements **continue, break, goto**
9. Classification of variables in C. Declaration of variables
10. Classification of data types in C. Predefined (built-in) data types
11. Operators and arithmetic and logic expressions
12. Basic data types. Data type modifiers
13. Derived data types. Arrays and pointers
14. One-dimensional arrays. Declaration, initialization and processing of one-dimensional arrays
15. Pointers and operations on pointers in C language
16. Links between arrays and pointers
17. Sorting one-dimensional array by linear selection method
18. Sorting one-dimensional array by method of selection and interchanges
19. Sorting one-dimensional array by bubble method
20. Sorting one-dimensional array by insertion method
21. Two-dimensional arrays. Declaration, initialization and processing of two-dimensional arrays
22. Functions in C language. Function declaration (prototype), function definition (code) and function call
23. Interchanging data between two functions. Passing (sending) and receiving data
24. Type and returning value of the function. Function call as an expression and as a statement
25. Two-dimensional statically allocated array. Pointer to one-dimensional array
26. Passing (sending) one- and two-dimensional arrays into function
27. Static and dynamic memory allocation in C language
28. Functions for dynamic memory allocation, reallocation and deallocation in C language
29. Dynamic memory allocation for one-dimensional array

Topics for problems:

1. Programming of branched structure and iterative (loop) structure algorithms
2. Flowchart of the algorithm
3. Loop in a loop
4. Processing of one-dimensional and two-dimensional arrays
5. Simple sorting and searching algorithms