**Exam topics**

**Subject: Fundamentals of programming - 1**

1. Information concept and information processes. Information units.

2. Quantitative characteristics of information. Alphabetic approach for

determining of information amount.

3. Number systems. Conversion of numbers from one to another positional

number system .

4. Coding of information. Representation of symbolic information.

Encoding standards.

5**.** Digital coding of images. Bitmap image .Color Models.

6. PC hardware. Architecture of a personal computer.

7. The logical basics of computer. Computer logic.

8. Computer Software. Types of Computer Software. Operating system.

9. The concept of algorithm. Properties of algorithm. Types of algorithms.

Methods of description of algorithms.

10. Fundamentals of programming, programming languages and

programming systems. Compilers and Interpreters.

11. The C programming language . C Program Structure.

12. C Programming language. Input & Output (I/O).

13. Programming of linear algorithms.

14.Programming of branching algorithms . Decision making.

15. Loops. Programming of tasks using loops.

16.Realization of classical algorithms over data of integer types.

17.C - Arrays. Sorting of arrays.

18.Two dimensional (2D) array in  C programming.

19.Recurrent sequences. The Fibonacci problem.

20. Random numbers. The pseudo-random number generator.