

University Interview Questions

09.04.02 - Information systems and technologies

Master's Program "Analysis and synthesis of information systems"

1. Data, message, information, knowledge and logic: basic concepts and definitions.
2. Information resources, informatics, information science; information theory.
3. Information system: general characteristics, types, structure, classification. Automated information system (AIS), its structure, types.
4. Methods and means for storage, transmission, presentation and dissemination of information. Interfaces of information systems.
5. Software of automated systems: concept of algorithms, programs, programming. Programming languages: concept, classification, characteristics, examples.
6. Means of information support of the AIS, their structure. Problem and functionally oriented AIS.
7. Technical support of information systems. Complexes of technical means.
8. Software life cycle model.
9. Structure and data model, format, and data field.
10. Modeling of information processes and systems. Types of models, modeling techniques. Simulation, functional and information models.
11. Machine (computer) graphics, video, sound, multimedia and hypermedia. Virtual reality, parallel world.
12. Statistical information system.
13. Information systems in the economic sector (accounting, banking, securities market).
14. Information systems in the social sphere, science, culture, education, health, law, etc.
15. Production information system.
16. CALS-system: concept, definition, application.
17. Automated workstations (AWS): purpose, types, structure, security.
18. Tools and technology to protect computer networks.

19. Linguistic support of information processes and systems. Lexical unit, dictionary, thesaurus, lexical complexes. Information retrieval languages.
20. Semantic, syntactic and pragmatic (paradigmatic) analysis of text information.
21. Basic data protection technologies. Software means of information protection
22. SQL. Basic commands.
23. Principles of structured programming. Basic control structures.
24. Notion of constant, variable, identifier, simple and composite data types (with examples in the language of choice).
25. Problem of decision-making: basic concepts, functions of PR, conditions and factors of quality decisions, concept of PR. Classification of PR tasks.
26. Purpose, principles and scope of expert systems. Architecture of expert system.
27. Unified modeling language UML.
28. Tools for conceptual design.
29. Basic concepts and distinctive features of object-oriented programming.
30. Characteristics of the devices interconnect.
31. Standardization and protocols of computer systems, model of interaction of open systems.
32. CASE-technology. Modern methods and means of designing information systems.
33. Analytical data processing technology. OLTP system and OLAP. Comparative characteristics.
34. Data warehouse. OLAP analysis tool. Architecture of OLAP applications.
35. Rapid application development (RAD) based on UML.