

Документ подписан простой электронной подписью  
 Информация о владельце:  
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## Assessment materials for intermediate certification in the discipline **Medical informatics**

Code, direction of preparation	05.31.01 General Medicine
Directivity (profile)	General Medicine
Form of study	full-time
Department-developer	Informatics and computer science
Graduate department	Internal diseases

### TYPICAL TASKS FOR CONTROL WORK (2th semester)

1. Create a solution algorithm and solve the problem using Excel. An experienced nurse spends 3 minutes on an injection, and her junior colleague (less experienced nurse) spends 25% more time. Calculate how much time (in hours) an experienced nurse and her junior colleague will spend on K injections (K is a random number in the range from 50 to 70).

2. Fill in the salaries of 20 employees of the public sector (random numbers in the range from 15,000 rubles to 50,000 rubles) and 20 employees of Surgutneftegaz OJSC (random numbers in the range from 20,000 rubles to 100,000 rubles) (use a monetary format with a currency unit designation - rubles). Using the IF function, compare the salary of each employee of Surgutneftegaz OJSC and a public sector employee. Calculate the average salary for public sector employees and employees of Surgutneftegaz OJSC.

3. In the task file.xlsx on worksheet task 4, solve the problems: the number of cases of diseases with temporary loss of ability to work (TLD) per 100 workers of various ages at enterprise N in the year under study is given. Visualize your data.

Возраст	до 19 лет		20-35		36-49		50 и старше	
пол	M	F	M	F	M	F	M	F
Случаи ЗВУТ	83	63,9	106,2	79,2	118	109	100	92

4. The explanation.docs file must have a title page, footers (except for the first title page), in the footer write "test No. 2". Use landscape orientation in the document, right and left margins are 2 inches, bottom and top are 1 inch. Font size 13, double line spacing. In the document, describe the algorithm for solving tasks 1-4. Use a hard page break so that the algorithm for each problem starts on a new page. Give each explanation a title. To describe the algorithm, use a numbered or multi-level list. Number the pages except the first (title). On the second page, create a table of contents.

5. Find the main sample characteristics of the Right Atrium field. Check whether the data follows a normal distribution. Draw a conclusion.

6. Find an equation that describes the relationship between BMI and height. Evaluate the quality of the equation.

7. Check to see if there is a significant difference between the weights of men and women. Null hypothesis and conclusion required

## **SAMPLE QUESTIONS FOR THE EXAM (2th semester)**

1. Computer science. Medical informatics.
2. Information barriers. Information explosion.
3. Information Technology. Informatization in society and healthcare. Digitalization of healthcare.
4. Information and data. Features of medical information. Operations with data.
5. The concept of coding text and graphic information. Measuring the amount of information.
6. Hardware Basics. Devices for input, output, storage, and processing of information.
7. Software Basics. Operating system. Basic OS functions.
8. Operating system interfaces. Drag-and-drop, OLE, plug and play technologies.
9. Information system. Automated IS, MIS.
10. MIS classification. Concept of automated workstation. Classification of workstations.
11. Telemedicine. Pros and cons, direction of development. Remote biomonitoring.
12. Probability theory and mathematical statistics. Probability of an event. An impossible and certain event.
13. Population and sample. Representative sample. Descriptive statistics indicators. Average values. Scatter indicators.
14. Visualization. Processing information using visualization tools.
15. Laws of distribution of random variables. Normal distribution law, its meaning.
16. Algorithmization and programming.
17. Local and global computer network. TCP/IP protocols. Domain names.
18. Internet services
19. Searching for information on the Internet, technology, assessing the reliability and quality of information.
20. IT used to prepare data for public presentation.