FINAL EXAMINATION

The following materials refer to the course "Machine Shops Design" and are to be used for final assessment.

Version 1

1. Enumerate the sequence of designing machine shops.
2. Describe how to calculate floor-to-floor time for one operation (process).
3. What functions does the production preparation and management service perform?

Version 2

1. Draw the CAD system block diagram.
2. Describe how to calculate total floor-to-floor time for operation (process).
3. What functions does the consumer service and labour safety service perform?

Version 3

1. What does the basic section of the machine shop design contain?
2. Describe how to calculate the batch size. What does the batch size influence on?
3. What is the structure of the quality inspection service?

Version 4

1. Describe how to determine a type of production.
2. Describe how to calculate the demanded amount of one type (j-type) of the machine tools in the shop?
3. What functions does the quality inspection service perform?

Version 5

1. What is the working mode?
2. Enumerate methods of labour intensity calculation. Enumerate advantages and disadvantages of each method.
3. What is the structure of the repair and maintenance service?

Version 6

1. What does the batch size influence on?
2. Describe how to calculate the demanded amount of the machine tools in the shop?
3. What functions does the repair and maintenance service perform?

Version 7

1. Draw a production efficiency graph depending on manufacturing automation. Specify the type of the equipment used.
2. What is technological process synchronization? What ways of it are there?
3. What is the structure of the tool management service?

Version 8

1. What principles is it necessary to adhere when designing shops?
2. Enumerate raw data for shop reconstruction.
3. What functions does the tool management service perform?

Version 9

1. What problems should be solved when designing machine shops?
2. Enumerate stages of calculating labour input to machine the annual program for all parts in the shop when designing a shop for small-scale production.
3. Describe how to reduce the volume of goods traffic in the shop. How is the volume of goods traffic shown in the shop layout?

Version 10

1. What is it necessary to create in order to develop standard-methodical support of a CAD system?
2. What is flow-line production?
3. Describe the types of the transport service according to their intended purpose.

Version 11

1. What are FMS, RTC, FMM, FTL, FMC, FMAF?
2. What are the engineering, technical and office personnel?
3. Describe the types of storehouses according to their intended purpose.

Version 12

1. What are the main stages of production?
2. What is the actual time arrangement? What are the norms for different quantity of working shift?
3. Describe the types of storehouses according to the form of storing.

Version 13

1. What is the difference between shop arrangement and shop layout?

2. Enumerate stages of calculating labour input to machine the annual program for all parts in the shop when designing a shop for small-scale production.
3. Describe the types of storehouses according to the level of mechanization.

Version 14

1. Enumerate the tasks which are solved at pre-design stage.
2. Enumerate construction and installation measures in order to increase flexibility of production.
3. What does the auxiliary system consist of?

Lecturer V. N. Kozlov