TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Mechanical Engineering

Institute of Automation, Mechatronics, Robotics and Production Systems
Department of Automation and Human Machine Interaction
Letná 9/B | 042 00 Košice

State questions from subject: Automation and Automation Technology
Study programme: Mechanical engineering (Bachelor), Study specialization: Mechanical engineering
AY: 2020/2021

1. Describe and explain Control and Regulation
2. Describe and explain Regulation Circuit
3. Describe and explain Logic Control and Logic functions
4. Programable logic controllers- characteristics, types, working cycle
5. Programmable logic controllers- programming languages
6. Basic parts of microcontrollers and their characteristics
7. Basic characteristic of industrial communication
8. Describe and explain the industrial communication pyramid – levels, parts, data
9. Describe and explain ISO/OSI model
10. Describe and explain methods of data transfer (based on the relations between the sender and receiver -master/slave and publisher/subscriber)
11. Describe Siemens microsystems (characteristics, properties, advantages, disadvantages).
12. Types of Siemens microsystems expansion modules (inputs/outputs, communication, power supply).
13. Composition (main parts) and versions of the Siemens microsystem.
14. Displaying of the informations via the Siemens microsystem (characteristic of the display, external display, display options).
15. Draw a sample connection scheme of the inputs/outputs based on the Siemens microsystem.
16. Describe the features and capabilities of the web server and application (Siemens App) with respect to the Siemens microsystem.
17. The role and properties of transducers in automation.
18. Resistance potentiometric transducers (principle of the operation).
19. Thermoelectric transducers (thermocouples), principle of the operation.
20. Basic structure of a robotic system (main parts and their function).
21. Classification of robotic systems in terms of their kinematic structure.

prof. Ing. Dušan Šimšík, PhD.,
guarantor