

**List of questions related to the subjects of the entrance examination**  
for the academic year **2026/2027**  
study program **Electronics and Photonics**  
(oral form)

1. Describe the principle of operation of the unipolar transistor.
2. What are the basic properties of the PN junction?
3. How do you classify signals? What are the basic characteristics?
4. What are boolean operators, and how do they work? Name the basic and extended operators.
5. Define the sensor device. Describe different types of sensors and their uses.
6. What are the basic architectures of microprocessors? Describe the difference between them.
7. What is the operational amplifier, and what are its basic properties? What are the fundamental operational amplifier circuits?
8. Describe an example of the digital circuit, its structure and properties.
9. Describe the interaction between the optical radiation and matter.
10. How do you classify the detectors of the optical radiation? Describe them.
11. How do you classify the sources of the optical radiation? Describe them.
12. Describe the principle of operation of the optical fibre.
13. Define the guided electromagnetic waves in microwave transmission lines.