Part 1: Therapeutic antibodies as biopharmaceuticals

1. Please describe the structure (subunits, domains, regions) of antibodies belonging to different classes.

2. Please give and describe 3-5 laboratory methods in which antibodies are used.

3. Please give and describe 3-5 examples of the use of antibodies for therapeutic purposes.

Part 2: New drugs - from synthesis to clinical trials

1. Discuss the key stages of drug discovery and development.

2. Discuss the fundamental concepts of drug origin and nomenclature.

3. What are the major concepts, tasks, and trends of drug discovery and research?

4. Discuss the essential physicochemical and pharmacological properties of biologically active substances in the initial phase of drug testing.

5. List and discuss the pharmacokinetic parameters that characterize the absorption, distribution, and elimination of drugs in the body.

6. Compare the most important properties of chemicals applicable for photodynamic cancer therapy, photodynamic inactivation of microorganisms and photodiagnostics.

Part 3: Raman biospectroscopy

1. Outline and explain two examples of SERS and TERS applicability for biomedical purposes.

2. Discuss a chosen chiralopical technique useful for biomedical applications.

3. What information on cells/tissues is provided by Raman imaging combined with AFM?