**Program of final attestation on discipline**

**«Bioinstrumentation»**

**Form and platform final control:** Oral exam

1. Classify equipment and devices applied in the laboratory and indicate their application briefly.
2. Classify laboratory glassware depending on its application.
3. Classify general laboratory equipment and indicate their application briefly.
4. Briefly describe the main laboratory equipment and glassware which are required to prepare a stock solution and its further dilutions.
5. Describe the main parts in experimental protocol.
6. Give a definition of the following terms: bioinstrumentation, sample preparation, extract, dilution, stock solution.
7. Describe most common methods of protein isolation and their principle of work.
8. Describe the principles of work of single beam and double beam spectrophotometers and its application in biology.
9. Describe the operating principle of microscope and its application in biology.
10. Describe the operating principle of electrophoresis and its application in biology.
11. Describe the principles of work of of gas chromatography, and its application field.
12. Describe the principles of work of of liquid chromatography, and its application field.
13. Describe the main equipment for cultivation and fermentation of microorganisms.
14. Describe the main equipment used in microbiology.
15. Characterize the main equipment for sterilization and disinfection.
16. Characterize the main apparatus equipment for preservation and storage of biological samples.
17. Describe the main equipment for water treatment and water purification.
18. Describe the main biotechnological techniques for treating wastewater and contaminated soils.