21.01.2021

BIOSENSORS – FINAL EXAM-

1. **(15 points)** What kinds of transducers are used to determine the electrochemical reactions that happen at the electrode-electrolyte interface? Explain.
2. **(10 points)** What are the challenges in order to develop an implantable biosensor?
3. **(10 points)** Explain how an amperometric and enzyme based glucose biosensor works.
4. **(20 points)** Assume that a biomarker (protein A) relating the cancer is discovered and you are asked to develop a biosensor system for the detection of this biomarker. How would you do that? Explain the design and working principle of your system.
5. **(15 points)** If you were asked to construct a microarray system, which technique you would use to do that? Explain your preferred technique.
6. **(15 points)** What is the difference between labeled and label-free biosensor system. Give an example to explain the difference.
7. **(15 points)** Discuss how a biosensor can be used in controlled drug delivery.