

Exercise 2 – Biomaterials II (including lecture from Eric Bartsch)

1. Your company has given you a membrane of their novel biofilm to test and asks you to do an extraction and direct contact test. The sample is a very thin disc of 3.4cm diameter. How do you set up these tests? Give details about the *amount of culture media, size of dish needed, time of experiment and temperature*.

2. The $\log(P)$ value of the anti-inflammatory drug LICOFELONE is 5. What strategy can be effective to deliver a sustained amount of this drug ?
 - a. Giving the patient injections every 6 hours
 - b. Incorporating the drug into the aqueous part of a nanoparticle
 - c. Incorporating the drug into poly (vinyl chloride) nanoparticles
 - d. Incorporating the drug into poly (methylmethacrylate) nanoparticles
 - e. Incorporating the drug into poly (lactic-co-glycolic acid) nanoparticles

3. How can you influence mechanical properties of implants?

4. What are the main three advantages of roughened surfaces on cementless implants?

5. Draw the chemical formula for polyvinyl alcohol and identify the groups which make this polymer water soluble.