

This is a summary of the questions that were asked on 10.12.21 (taken from the WhatsApp group)

1. pyrogenic: what does it mean, name tests to check for pyrogenic material
2. foreign body reaction: different stages, how can we influence the foreign body reaction
3. metals: definition, lattice structure and name an example material and application, what is a problem when using a metal as an implant
4. polymers: definition, classify them in terms of morphology, why are thermoplasts soluble, what happens when heating up polymers, name a biodegradable polymer
5. stents: what materials can be used, how can we avoid restenosis, what is the latest generation of stents

1. Classes of BD
2. ceramics: properties, difference to glasses, glass ceramics
3. zirconia: transformation strengthening
4. define strength, stiffness, etc + parameters for each (Youngs, yield strength, ...)
5. sterility: what is it? SAL, name all sterilisation methods, In detail: steam and dry heat (mechanism,pros, cons, which materials)

1. Apart from the usual questions I was asked:
2. what is the proces of making a hydrogel
3. describe the proces od 3D printing of ceramics

1. Classification of MD
2. Stress shielding
3. explanation of metal ductility
4. strengthening of metals
5. superelasticity (nitinol)
6. glass ceramics and glass (difference)

1. Classification of Medical Devices (all of the with details, risks and examples) what happens if a knee prosthetic fails?
2. Stress shielding (do the calculations for the loads) what is it? Which laws describe it? Why does it happen?
3. Zirconia. What induces the transformation? What physical formulas describe this transformation? (Fracture mechanics) give all the mechanical values
4. Superelasticity and Shape memory alloys. Describe the stress/strain curve, and the formula that describes it.
5. Stress shielding (description of the phenomena, why does it happen? What formula/physics describe it?