

Problem M18

Read Ashby and Jones Chapters 4, 5 and 6. Answer the following short questions (each answer should be one or two sentences only, the important task is the reading, the questions are to focus your attention):

- i) What are the two principal factors that contribute to the Young's modulus of a homogeneous material?
- ii) What is the glass transition temperature of a polymer and what is the underlying cause for this?
- iii) Why do metals tend to have higher densities than ceramics or polymers?
- iv) What is the relationship between the force exerted by an interatomic bond as a function of separation of the atoms and the potential energy associated with the same separation of the atoms?