QUIZ on Lecture P1_Wk4_L4

1. The optical sensitivity S of the position sensitive detector (PSD) in an AFM is usually

a) a well-defined number calibrated at the factory
b) known through a calibration procedure
c) derived by knowing the geometry of the AFM head
d) provided with the purchase of AFM cantilevers

2. If the cantilever deflects from its equilibrium position when the tip is not in contact with the substrate you might infer that

a) The cantilever must be bent.
b) The tip on the end of the cantilever must be broken.
c) There is a long range force between the tip and substrate.
d) There is no net substrate force acting on the tip.

3. A calibration of the optical sensitivity of the position sensitive detector (PSD) in an AFM depends

a) on the color of the laser light
b) on the radius of the tip
c) on the relative humidity of the ambient air
d) on the precise alignment of the laser on the cantilever

4. When approaching the tip to the substrate to measure an AFM approach curve (a measure of the cantilever deflection vs sample displacement), it is generally a good idea to

a) take the data as quickly as possible
b) take the data as slowly as possible
c) restrict the sample displacement to a narrow range of values
d) take only a few data points