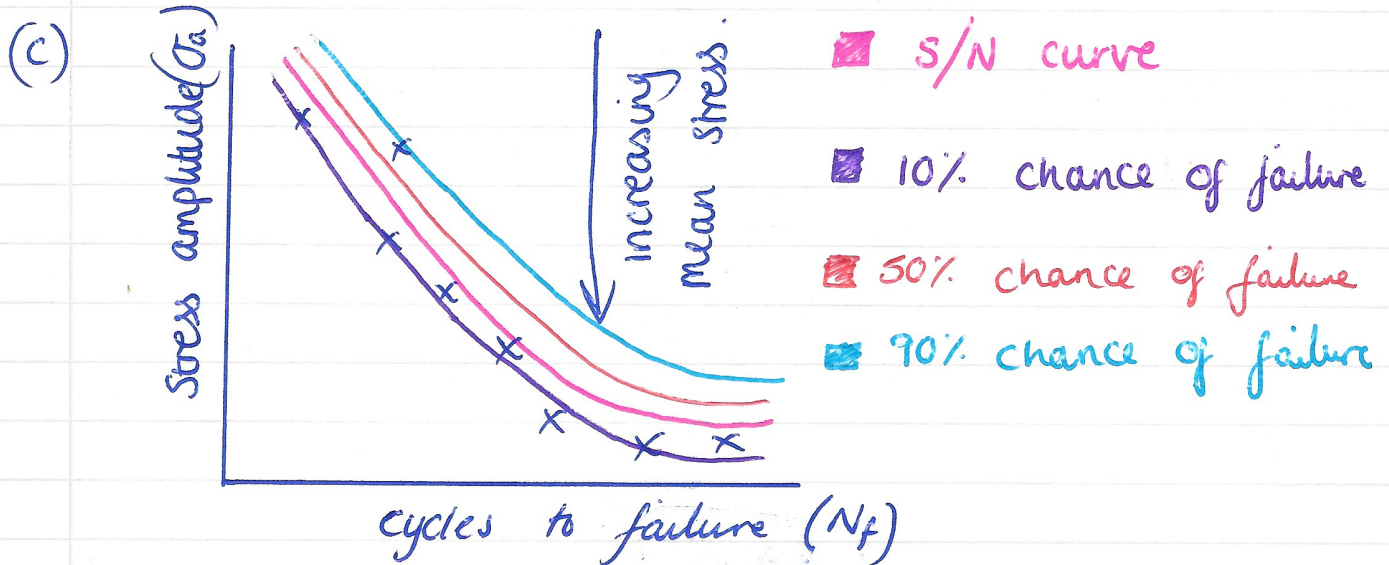


Question 4 continued...



By carrying out the test in part (a) one plot can be made on the graph. This test would need to be repeated using several different stress amplitudes. Once these are plotted, a line of best fit can be added to determine the relationship between the stress amplitude and the number of cycles. Depending on whether the material is ferrous or non-ferrous, the fatigue limit or endurance limit can be realised.

The fatigue life of a component can differ differ widely even with seemingly identical specimen.

P/S/N curves are used to display the probability of failure after several tests have been conducted at the same stress.