

1) A pencil, when dipped in water in a glass tumbler, appears to be bent at the interface of air and water. Will the pencil appear to be bent to the same extent, if instead of water we use liquids like, kerosene or turpentine? (Yes/No) Why?

A) When a pencil is kept in a glass tumbler of water, it appears bent due to refraction of light. When a ray of light travels from a rarer medium (air) to a denser medium (water) it bends towards the normal. Thus, the pencil appears bent.

However, if the pencil is kept inside turpentine or kerosene the bending is not the same as water since it is less dense than water (refractive index of kerosene is greater than water)