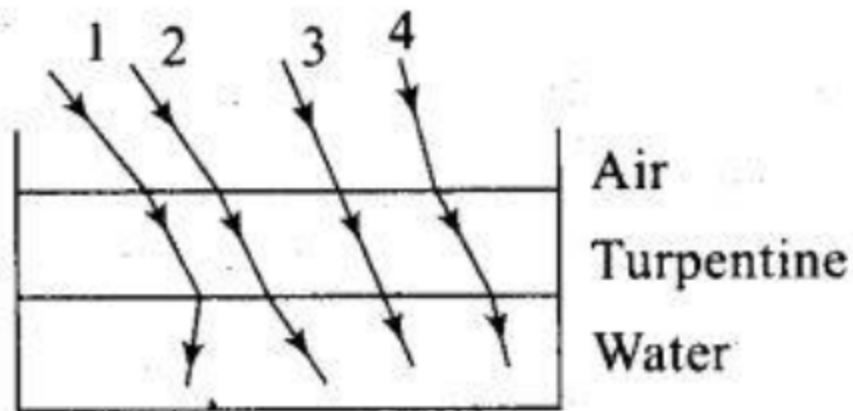


Q4. The optical density of turpentine is higher than that of water while its mass density is lower. Figure shows a layer of turpentine floating over water in a container. For which one of the four rays incident on turpentine in figure, the path shown is correct?



(a) 1 (b) 2 (c) 3 (d) 4

Solution: (b)

Here, light ray goes from (optically) rarer medium air to optically denser medium turpentine, then it bends towards the normal, i.e., $\theta_1 > \theta_2$ whereas when it goes from to optically denser medium turpentine to rarer medium water, then it bends away the normal.