Answer to Question#51459 – Physics – Mechanics – Kinematics – Dynamics

Question

a drop of some liquid of volume 0.04cm3 is placed on the surface of a glass slide.then another glass slide is placed on it such a way that the liquid forms a thin layer of area 20cm2 between the surface of the two slides.to separate the slids of force of 16*10^5dyne has to be applied normal to the surface.the surface tension of the liquid is in dyne/cm...

a) 60. b) 70. c) 80. d) 90

Solution

$16 * 10^5 dyne = 16N;$

$L = \frac{V}{S} = \frac{0.04}{20} = 0.002\ cm = 0.2\ m;$

$\sigma = \frac{F}{L} = \frac{16}{0.2} = 80\frac{H}{m} = 8 * 10^4\frac{dyne}{cm};$

Answer: c) $80\frac{H}{m}$; ($8 \cdot 10^4\frac{dyne}{cm}$);