EXERCISE – III   **JEE QUESTIONS**

1. $P_{in} = P_0 = \dfrac{2T}{r}$

If jump is const then

$P_1 V_1 = P_2 V_2$

as bubble move upward = $P \downarrow v \uparrow$

2.

3. $q\varepsilon = mg$ ....(i)

$mg = 6 \pi \eta \, rv$ ....(ii)

and $m = \dfrac{4}{3} \pi r^3 \rho g$ ...(iii)

from eq. (i), (ii), (iii) find q

4.   Net vertical force due to surface tension is

$F = T \sin \theta \, (2\pi r)$

$\therefore \quad F = T \dfrac{r}{R} (2\pi r)$

$F = \dfrac{2\pi r^2 T}{R}$

5. $\left(\dfrac{2T}{R}\right)\left(\pi r^2\right) = \dfrac{4}{3} \pi R^3 \eta g$

$R = \left[\dfrac{6Tr^2}{4fg}\right]^{1/4}$

6.   Surface Energy = $T \, (4\pi R^2)$

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