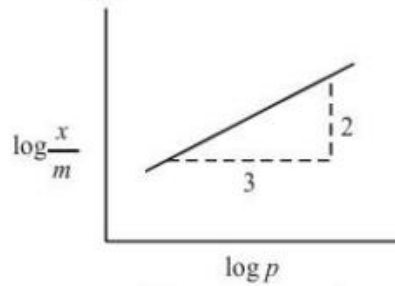8. Adsorption of a gas follows Freundlich adsorption isotherm. x is the mass of the gas adsorbed on mass m of the adsorbent. The plot of $\frac{x}{m}$ versus log p is shown in the given graph. $\frac{x}{m}$ is proportional to : **[April 8, 2019 (I)]**

Ans. (a)

(a) $p^{2/3}$ (b) $p^{3/2}$ (c) p^3 (d) p^2

8. **(a)** According to Freundlich adsorption isotherm

$$\frac{x}{m} \propto p^{\frac{1}{n}} \quad ; \quad \frac{x}{m} = kp^{\frac{1}{n}}$$

$$\text{Slope} = \frac{2}{3}$$

$$\log \frac{x}{m} = \log k + \frac{1}{n} \log p$$

$$\text{Slope} = \frac{1}{n} = \frac{2}{3}$$

$$\frac{x}{m} \propto p^{\frac{2}{3}}$$