(d) : Let the density of ball be ρ and the density of glycerine be $\rho/2$.

In equilibrium : Drag force + Buoyant force = Weight

F_D = Weight – Buoyant force

$$= Mg - (V_{\text{liquid displaced}})\frac{\rho}{2}g$$

$$F_D = Mg - \frac{M}{\rho}.\frac{\rho}{2}g = M\frac{g}{2}$$