

**Marks**  
**3**

- Zinc sulfate (0.50 g) is dissolved in 1.0 L of a 1.0 M solution of KCN. Write the chemical equation for the formation of the complex ion  $[\text{Zn}(\text{CN})_4]^{2-}$ .

Calculate the concentration of  $\text{Zn}^{2+}(\text{aq})$  in solution at equilibrium. Ignore any change in volume upon addition of the salt.  $K_{\text{stab}}$  of  $[\text{Zn}(\text{CN})_4]^{2-} = 4.2 \times 10^{19} \text{ M}^{-4}$ .

Answer: