These are the formula that will appear on the data page of the exam. 
Not all of the formula will necessarily be used in the examination paper.

**Thermodynamics and Equilibrium**

\[ \Delta G^o = \Delta H^o - T \Delta S^o \]
\[ \Delta G^o = -RT \ln K \]
\[ K_p = K_c (RT)^{\Delta n} \]

**Colligative properties**

\[ \pi = cRT \]
\[ p = kc \]

**Acids and Bases**

\[ pK_w = \text{pH} + \text{pOH} = 14 \]
\[ pK_w = pK_a + pK_b = 14 \]
\[ \text{pH} = pK_a + \log \left( \frac{[\text{base}]}{[\text{acid}] \} \right) \]

**Kinetics**

\[ \ln[A] = \ln[A]_0 - kt \]
\[ t_{1/2} = \ln 2 / k \]
\[ k = A e^{-E_a/RT} \]

**Electrochemistry**

\[ \Delta G_0 = -n费 \]
\[ E = E_0 - RT/nF \ln Q \]
\[ E_0 = RT/nF \ln K \]
\[ \text{Moles of e}^- = It/F \]

**Quantum Chemistry**

\[ E = h\nu = hc/\lambda. \]