**Acid Unit: Equilibrium & Rates of Reaction**

1. A sample of NO2(g) is formed from its elements . Using the **smallest whole number coefficients** to balance the reaction, the correct expression for K(eq) is \_\_\_\_\_\_\_

|  |  |
| --- | --- |
| a |  |
| b |  |
| c |  |
| d |  |

1. The Keq for a reaction is given as Keq =

This equilibrium constant is for the reaction \_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| a | 2R(g) + T(aq) 🡨 🡪 3X(g) |
| b | 3X(aq) 🡨 🡪 2T(aq) + R(g) |
| c | 2Q(aq) + 3X(g) 🡨 🡪 T(g) + 2R(aq) |
| d | 2Q(s) + 3X(aq) 🡨 🡪 T(g) + 2R(g) |

1. Consider the reaction below:

**2NO2(g) 🡨 🡪 N2O4(g) + 55.3 kJ**

The correct equation for solving for the Keq of this reaction is \_\_\_\_\_

|  |  |
| --- | --- |
| a | Keq = |
| b | Keq = |
| c | Keq = |
| d | Keq = |

1. A characteristic of an equilibrium system is \_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| a | the presence of equal amounts of reactants and products |
| b | the completion of a chemical reaction when changes cease to occur |
| c | equal amounts of reactants and products entering and being removed from the system |
| d | the conversion of reactants to products occurring at the same rate as the conversion of products to reactants |

1. **Numerical response question**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

Left justify your answer in the boxes provided.

|  |
| --- |
| Kailyn is going off to university in the Los Angeles. To help her prepare, her classmates give her a Bottle-of-smog: a 100 mL glass tube that contains dinitrogen tetraoxide at equlibirum.  **N2­O4(g) 🡨 🡪 2NO2(g)**  The tube is place in boiling water where it turns a dark brown. At this temperature the Kc is 0.211.  If the equilibrium concentration of N2O4(g) is 0.049  , then the equilibrium concentration of NO2(g) will be a.b x 10-c |

Solutions

1. A
2. D
3. B
4. D
5. 321