CHEMISTRY

AAKASH INSTITUTE ENGLISH

MOCK TEST 12

Exercise

1. For an equilibrium reaction, if the value of

standard Gibb's free energy, AG° is zero, then

the value of equilibrium constant, K will be equal to
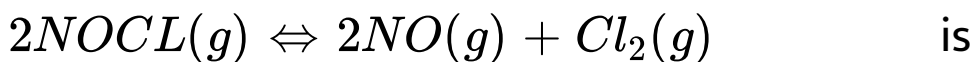
A. Zero

B. 2

C. 1

D. 10

Answer: C

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2. The equlibrium constant k_p for the reactin.

$$2NOCL(g) \Leftrightarrow 2NO(g) + Cl_2(g) \qquad\qquad \text{is}$$

$6.95 \cdot 10^{-8}$ at 298K . The standard gibb free energy change $,\Delta G^0$ at 298 K will be (

$R = 2calK^{-1}mol^{-1}$) (log 6.95 = 0 8420)
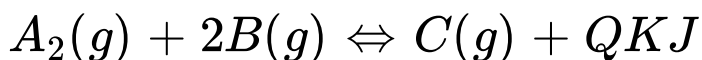
    A. 4.912 kcal

    B. 14.74 kcal

    C. 7.3 kcal

    D. 9.825kcal

Answer: D

3. The yield of product in the reaction,

$$A_2(g) + 2B(g) \Leftrightarrow C(g) + QKJ$$

would be higher at:

    A. High temperature and high pressure

    B. High temperature and low pressure

    C. Low temperature and high pressure

    D. Low temperature and low pressure

Answer: C

4. A chemical reaction is catalysed by a catayst X. hence X.

A. Changes the equilibrium constant of the reaction

B. Changes the enthalpy of reaction (AH)

C. Alters the concentration of both reactants and products in a state of equilibrium

D. Increases the speed of both the forward and backwand eactions to same extent in a reversible

Answer: D

5. Which one of the equation is currect ?

A. $\Delta G = \Delta G^0 + nRT \log Q$

B. $\Delta G^0 = \Delta G + nRT \log Q$
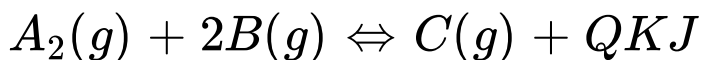
C. $\Delta G = \Delta G^0 + nRT \ln Q$

D. $\Delta G^0 = \Delta G + nRT \ln Q$

Answer: C

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6. The yield of product in the reaction,

$$A_2(g) + 2B(g) \Leftrightarrow C(g) + QKJ$$

would be higher at:
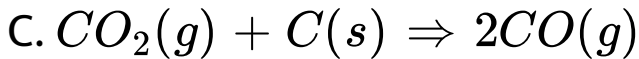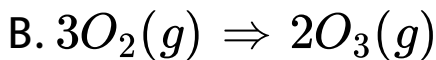
A. 4.24

B. 2.12

C. 42.4

D. 8.48

Answer: A

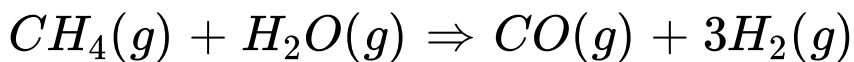▶ **Watch Video Solution**

7. In which of the following reaction, the formation of product is favoured by increase in pressure?

A. $CO_2(g) \Rightarrow 2CO(g) + O_2(g)$

B. $3O_2(g) \Rightarrow 2O_3(g)$

C. $CO_2(g) + C(s) \Rightarrow 2CO(g)$

D.

$$CH_4(g) + H_2O(g) \Rightarrow CO(g) + 3H_2(g)$$

Answer: B

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8. Consider the following reaction at equilibrium: `NH_4HS(s)

A. Equilibrium shifts in the backward direction

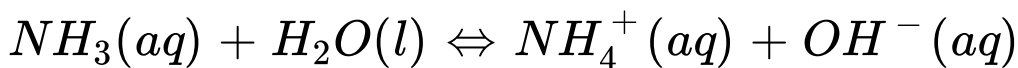B. Equilibrium shifts in the forward direction

C. Equilibrium remains unaffected

D. The value of K is increased

Answer: C

9. Ammonia is a weak base that reacts with water according to the equation

$$NH_3(aq) + H_2O(l) \Leftrightarrow NH_4^+(aq) + OH^-(aq)$$

Select the correct option (s) that can increase the moles of ammonium ion in water:

A. Addition of HCl

B. Addition of H_2O

C. Addition of NaOH

D. Addition of NH_4Cl

Answer: C

10. The equilibrium,

$BaCO_3(s) \Leftrightarrow Ba0(s) + CO_2(g)$ will shift in

left hand direction by

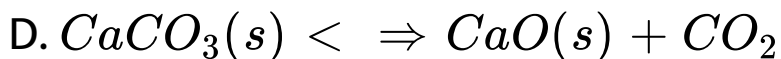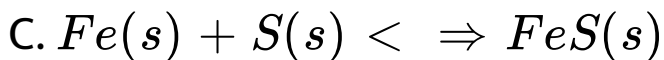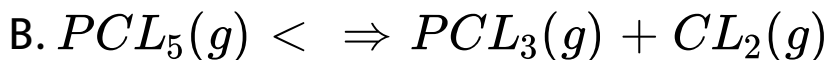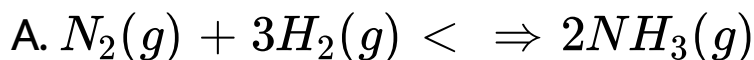A. Addition of BaO(s)

B. Removal of CO_2(g)

C. Removal of Bao(s)

D. Decreasing the volume of the vessel

Answer: D

11. Le - Chatelier principle is not applicable to :

A. $N_2(g) + 3H_2(g) < \Rightarrow 2NH_3(g)$

B. $PCL_5(g) < \Rightarrow PCL_3(g) + CL_2(g)$

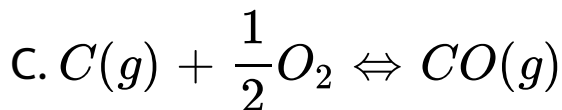C. $Fe(s) + S(s) < \Rightarrow FeS(s)$

D. $CaCO_3(s) < \Rightarrow CaO(s) + CO_2$

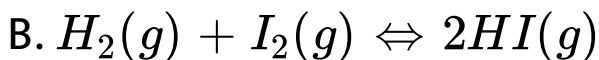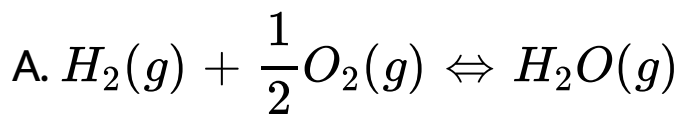**Answer: C**

12. In which of the following reactions, increase in the pressure at constant temperature does not affect the moles at equilibrium?

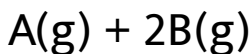A. $H_2(g) + \dfrac{1}{2}O_2(g) \Leftrightarrow H_2O(g)$

B. $H_2(g) + I_2(g) \Leftrightarrow 2HI(g)$

C. $C(g) + \dfrac{1}{2}O_2 \Leftrightarrow CO(g)$

D. $2NH_3(g) \Leftrightarrow N_2(g) + 3H_2(g)$

Answer: B

13. For the gas phase exothermic reaction,`

A(g) + 2B(g)
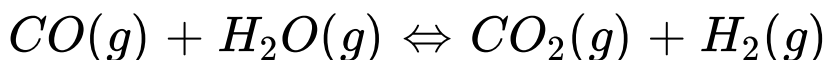
    A. Decreasing the temperature

    B. Increasing the pressure

    C. Adding inert yas at constant pressure

    D. Removing C(g) at equilibrium

Answer: C

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14. For the reaction

$$CO(g) + H_2O(g) \Leftrightarrow CO_2(g) + H_2(g)$$

at a given temperature, the equilibrium

amount of $CO_2(g)$ can be increased by

    A. Increasing the pressure

    B. Adding an inert gas at constant pressure

    C. Increasing the volume of the container

D. Increasing the amount of CO(g)

Answer: D

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