CHEMISTRY

JEE MAIN AND ADVANCED

MOCK TEST 12

Exercise

1. For an equilibrium reaction, if the value of standard Gibb's free energy, AG^{o} 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)

A. 4.912 kcal

B. 14.74 kcal

C. 7.3 kcal

D.

Answer: D

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3. The yeild of production of `A_2(g) + 2B(g)

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

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4. A chemical reaction is catalyzed by a catalyst' X'. Hence the catalyst '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

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5. Which one of the equation is currect ?

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

B. $\delta G = \delta G + nRT \log Q$

C. $\delta G = \delta G^0 + nRTInQ$

D. $\delta G = \delta G + nRTInQ$

Answer: C

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6. The yeild of production

A. 4.24

B. 2.12

C. 42.4

D. 8.48

Answer: A

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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

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9. Ammonia is a weak base that reacts with water according to the equation:` NH_3(aq) +H_2O(I)

A. Addition of HCI

B. Addition of H_2O

C. Addition of NaOH

D. Addition of NH_4CI

Answer: C

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10. The equilibrium,` Baco_3(s)

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

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11. Le-Chatelier's principle is not applicable to which of the following reaction?

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

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

A. $H_2(g) + \frac{1}{2}O_2(g) < \Rightarrow H_2O(g)$

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

C. $C(g) + \frac{1}{2}O < \Rightarrow CO(g)$

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

Answer: B

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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 reaaction,` $CO(g) + H_2O(g)$

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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