



CHEMISTRY

JEE MAIN AND ADVANCED

MOCK TEST 12

Exercise

1. For an equilibrium reaction, if the value of standard Gibb's free energy, ΔG° 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 equilibrium constant k_p for the reaction.



A. 4.912 kcal

B. 14.74 kcal

C. 7.3 kcal

D.

Answer: D



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3. The yield 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 (ΔH)

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

D. Increases the speed of both the forward and backward reactions to same extent in a reversible

Answer: D



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5. Which one of the equation is correct ?

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

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

$$C. \delta G = \delta G^0 + nRT \ln Q$$

$$D. \delta G = \delta G + nRT \ln Q$$

Answer: C



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6. The yeild of production

A. 4.24

B. 2.12

C. 42.4

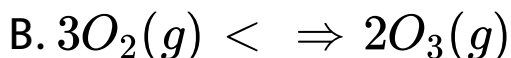
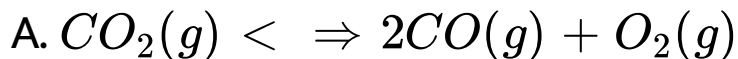
D. 8.48

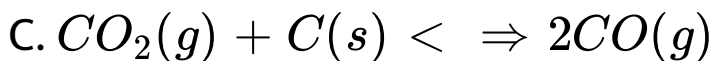
Answer: A



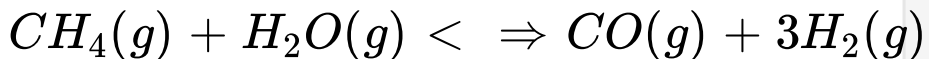
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7. In which of the following reaction, the formation of product is favoured by increase in pressure?





D.



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: $\text{NH}_3(\text{aq}) + \text{H}_2\text{O}(\text{l})$

- A. Addition of HCl
- B. Addition of H_2O
- C. Addition of NaOH
- D. Addition of NH_4Cl

Answer: C



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10. The equilibrium, $\text{BaCO}_3(\text{s})$

A. Addition of $\text{BaO}(\text{s})$

B. Removal of $\text{CO}_2(\text{g})$

C. Removal of $\text{BaCO}_3(\text{s})$

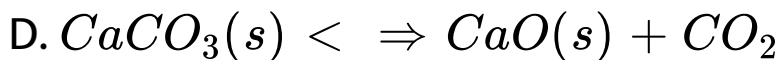
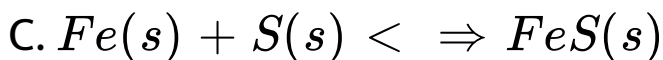
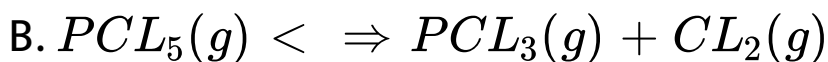
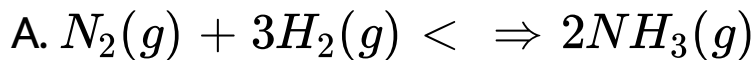
D. Decreasing the volume of the vessel

Answer: D



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

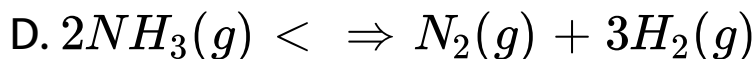
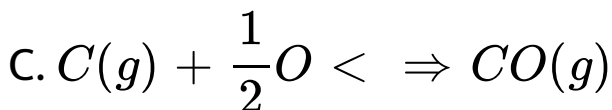
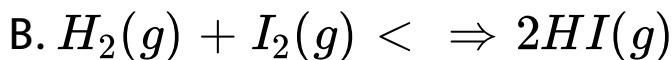
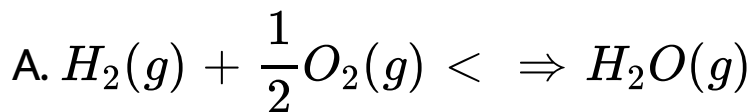


Answer: C



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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?

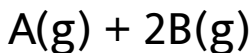


Answer: B



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13. For the gas phase exothermic reaction,



- A. Decreasing the temperature
- B. Increasing the pressure
- C. Adding inert gas at constant pressure
- D. Removing C(g) at equilibrium

Answer: C



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14. For the reaction, $\text{CO(g)} + \text{H}_2\text{O(g)}$

- 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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