

Self-Assessment

Chapter 6: Thermodynamics

1. A well stoppered thermos flask contains ice cubes. This is an example of

- (a) Closed system
- (b) Open system
- (c) Isolated system
- (d) Non thermodynamics system

2. For the reaction $C(s) + O_2(g) \rightarrow CO_2(g)$

- (a) $\Delta H > \Delta U$
- (b) $\Delta H < \Delta U$
- (c) $\Delta H = \Delta U$
- (d) None of these

3. The least random state of the water system is

- (a) ice
- (b) liquid water
- (c) steam
- (d) randomness is same

4. The entropy(S) thermodynamic parameters the criteria for the spontaneity of any process are

- (a) $\Delta S_{\text{system}} + \Delta S_{\text{surroundings}} > 0$
- (b) $\Delta S_{\text{system}} - \Delta S_{\text{surroundings}} < 0$
- (c) $\Delta S_{\text{system}} > 0$
- (d) $\Delta S_{\text{surroundings}} > 0$

5. The correct relationship between free energy change in a reaction and the equilibrium constant K_C is

- (a) $-\Delta G = RT \ln K_C$
- (b) $\Delta G^0 = RT \ln K_C$

(c) $-\Delta G^0 = RT \ln K_C$

(d) $\Delta G = RT \ln K_C$

6. When water is added to quick lime the reaction is

(a) Explosive

(b) endothermic

(c) exothermic

(d) photochemical

7. When work is done on system or by a system there is a change in _____

a) external energy

b) internal energy

c) adiabatic energy

d) isothermal energy

8. Which of the following is an intensive property?

a) Volume

b) Colour

c) Enthalpy

d) Internal energy

9. Bomb calorimeter is _____ in nature.

a) isothermal

b) isochoric

c) isobaric

d) absolute

10. The standard state of a substance is considered when the temperature is 298 k and the pressure is _____

a) 1 ATM

b) 1 bar

c) 1 Pascal

d) 760 mm HG

Answers

1.c 2.c 3.a 4.a 5.c 6.c 7.b 8.b 9.b 10.b