

Chemistry NTS Test Preparation

1) The naturally occurring process proceed with the

- a. Increase of energy
- b. decrease of energy
- c. none of these
- d. both of these

2) If the heat content of B is greater than that of A, the reaction

$A \longrightarrow B$ is

- a. Endothermic
- b. Exothermic
- c. Instantaneous
- d. Spontaneous

3) The entropy of universe

- a. Tends towards a Max
- b. Tends towards Min
- c. Tends to zero
- d. Remain constant

4) The exothermic process is

- a. evaporation
- b. sublimation
- c. respiration
- d. boiling

5) K.E of molecules of gaseous substance is due to

- a. vibrational energy

b.translational energy

c.rotational energy

d.sum of all these

6) spontaneous reactions are

a.reversible

b.irreversible

c.none of these

d.not irreversible

7) For the reaction $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$ the enthalpy change is called

a.heat of formation of water

b.heat of formation of NaCl

c.heat of neutralization

d.heat of reaction

8) At constant volume q_v is=

a. ΔH

b. ΔE

c. ΔP

d. ΔV

9) The first law of thermodynamics is merely the law of

a.conservation of mass

b.conservation of energy

c.conservation of mass & energy

10) In a bomb calorimeter the reactions are carried out at

a.constant volume

b.constant temperature

c.constant pressure

d.keeping all parameters

11) The net change in a chemical reaction is same whether it takes place directly or indirectly is

a. Henry's law

b. Charles's law

c. Hess's law

d. Graham's law

12) Heat of reaction depends on

a.pressure

b.volume

c.temperature

d.all of above

13) The process of evaporation of liquid is accompanied by

a.decrease in enthalpy

b.decrease in entropy

c.increase in enthalpy

d.no change in free energy

14) Which thermodynamic property provides a measure of randomness in system?

a.enthalpy

b.entropy

c.free energy

d.density

15) Which of the following is not a state function

a.enthalpy

- b.work
- c.entropy
- d.internal energy

16) Bond breaking process is

- a.exothermic
- b.endothermic
- c.some exothermic and some endothermic
- d.no energy change

17) In exothermic reaction,when heat is given out the temperature of the system

- a.increases
- b.decreases
- c.remain same
- d.same at room temperature

18) Internal energy is sum of

- a. K.E & heat energy
- b. K.E only
- c. K.E,P.E, vibrational,rotational
- d. none of above

19) In which of the following neutralization reaction,will the heat of neutralization be highest?

- a.NH₄OH & H₂SO₄
- b.HCl & NaOH
- c.CH₃COOH & KOH
- d.CH₃COOH & NH₄OH

20) When a solid is converted into liquid entropy

- a.becomes zero
- b.decrease
- c.increase
- d.remains the same

21) Consider a chemical reaction $\text{CO}_2(\text{l}) \rightarrow \text{CO}_2(\text{g})$ (endothermic)

the enthalpy change

- a. $\Delta H < \text{zero}$
- b. $\Delta H > \text{zero}$
- c. $\Delta H = \text{zero}$
- d.none

22) Which change would have the negative value of ΔH

- a. $\text{Na}(\text{s}) \rightarrow \text{Na}(\text{g})$
- b. $\text{Cl}(\text{g}) + \text{e}^- \rightarrow \text{Cl}^{-1}(\text{g})$
- c. $\text{Na}(\text{s}) \rightarrow \text{Na}^{+1}(\text{g}) + \text{e}^-$
- d. $\text{Cl}_2(\text{g}) \rightarrow 2\text{Cl}(\text{g})$

23) A spontaneous change is one in which the system suffers

- a.increase in internal energy
- b.lowering of free energy
- c.lowering of entropy
- d.no energy change

24) which of the following gases has the highest heat of combustion?

- a.Methane
- b.Ethane
- c.Ethylene
- d.Acetylene

25) Which of the following is not application for a thermo chemical reaction?

- a. It tells about the physical state of reactants and products.
- b. it tells whether a reaction is exothermic or endothermic
- c. it tells about the allotropic form(if any) of the reactant
- d. it tells whether a reaction is possible or not.

Answer Key

1b , 2a, 3a, 4c, 5d, 6b, 7c, 8b, 9b, 10a, 11c, 12d, 13c, 14b, 15b, 16b, 17a, 18c, 19b, 20c, 21b, 22b, 23b, 24b, 25d