Chemistry - 11th Class Chemistry Short Questions Chapter 7 Preparation

Q1. What is meant by heat(q) and work (W) in thermochemistry?

Ans 1: There are two fundamental ways of transferring energy to or from a system. These are heat and work. Heat is not a property of a system. It is therefore not a state functions. Heat evolved or absorbed by the system is represented by a symbolq.Work is also a form in which energy is transferred from one system to another.

Q2. What is a spontaneous process?

Ans 1: The process which takes place on its own is called spontaneous process. No external. Assistance is required. It moves from non-equilibrium state. It is unidirectional and irreversible.

Q3. How the temperature of the system change during exothermic and endothermic reactions?

Ans 1: In an exothermic reaction, heat is evolved which increases the temperature of the system. In an endothermic reaction, heat is absorbed, so the temperature of the system falls down. These statements are true when the system is isolated.

Q4. What are thermochemical reaction,give their type/

Ans 1: Thermochemical Reaction: Those reaction in which energy is either evolve or absorbed during a chemical change is called thermochemical reactions.
Two types of those reactions:

1. Exothermic reactions
2. Endothermic reactions

Q5. Spontaneous reaction always proceed in the forward direction.Give reason?

Ans 1: Spontaneous process are unidirectional, irreversible and real processes. These can take place without any external assistance. That's why reactions always proceed in forward direction.

Q6. Why in exothermic reaction, heat is released from the system?

Ans 1: In a chemical change if enthalpy of product is less than the enthalpy of reactant.Heat is released from the system to surrounding . Hence heat is released in an exothermic reaction.

Q7. Define Born-Haber cycle and lattice energy?

Ans 1: Born-Haber cycle: The sum of energy changes for a closed cyclic process is zero, If the initial and final states are same. Lattice Energy: The amount of energy released when gaseous icons of opposite charges combine to give one mole of a crystalline

ionic compound.

Q8. Define Thermochemistry.

Ans 1: That branch of chemistry which deals with the heat energy changes along with the phase changes and occurring of the chemical reactions, is called thermochemistry.

Q9. Is it true that a non-spontaneous process never happen in universe?Explain it?

Ans 1: Yes it is true that non-spontaneous processes never happen in the universe.Because a non-spontaneous process needs energy to take place.Since this energy is not available of its own. Therefore a non-spontaneous process never happens in the universe.

Q10. Acid-base neutralization process is always exothermic.Give reasons?

Ans 1: The standard enthalpy of neutralization is the amount of heat evolved when one mole of hydrogen icons H^+From an acid, react with one mole of hydroxide ions from a base to form one mole of water. For example, the enthalpy of neutralization of sodium hydroxide by hydrochloric acid is -57.4 $kjmol^{-1}$
Thus heat is evolved in acid base neutralization process is always exothermic