

Thermochemistry Viva Questions With Answers

Question.1. Define enthalpy of neutralization.

Answer. Enthalpy of neutralization of an acid or a base is the enthalpy change when one gram equivalent of the acid is neutralised by a base or vice versa.

Question.2. What is the enthalpy of neutralisation of a strong acid and a strong base ?

Answer. When one gram equivalent of a strong acid is neutralised by one gram equivalent of a strong base or vice versa, the enthalpy change is always equal to -57.3 kJ.

Question.3. Why the enthalpy of neutralisation of a strong acid with a strong base is always the same ?

Answer. This is because it always involves the combination of one gram equivalent of H^+ ions with OH^- ions to form unionised water molecules.

Question.4. Define enthalpy of solution.

Answer. It is the enthalpy change taking place when one mole of a substance is dissolved in a specified number of moles of solvent at a given temperature and pressure.

Question.5. Why is copper sulphate taken in powdered form ?

Answer. To facilitate its dissolution in minimum time and thus preventing heat loss to the surroundings.

Question.6. Will enthalpy of solution of hydrated copper sulphate and anhydrous copper sulphate be same ?

Answer. No, in case of anhydrous copper sulphate enthalpy change will not only correspond to the dissolution process but also to hydration process, i.e., we get enthalpy of hydration plus enthalpy of solution.

Question.7. Why is temperature recorded with a thermometer calibrated to $1/10$ th degree ?

Answer. For more accurate results.

Question.8. Is the enthalpy of neutralisation of acetic acid the same as that of HCl. If not why ?

Answer. Acetic acid is a weak acid and is not completely ionised. Some heat is used up for the ionisation of acetic acid. Hence the net heat evolved is less and not the same as that of HCl which is completely ionised.

Question.9. Is the dissolution of hydrated copper sulphate an exothermic or endothermic process?

Answer. Endothermic process.

Question.10. 50 ml of a liquid A are mixed with 50 ml of liquid B. The volume of resulting solution is found to be 99.5 ml. What do you conclude about nature of solution?

Answer. The solution shows a negative deviation from Raoult's law, A—B interactions are stronger than A—A and B—B interactions.

Question.11. When a liquid A is mixed with liquid B, the resulting solution is found to be cooler. What do you conclude about nature of solution?

Answer. The solution shows a positive deviation. Absorption of heat takes place. A—B interactions are weaker than A—A and B—B interactions.

Question.12. What type of deviation is expected of a solution obtained by adding conc. H_2SO_4 to water?

Answer. The solution shows negative deviation. Heat is liberated. A—B interactions are stronger than A—A and B—B interactions.