

45. Which of the following statements about colloids is false?

[Online April 15, 2018 (I)]

- (a) When silver nitrate solution is added to potassium iodide solution, a negatively charged colloidal solution is formed
- (b) Freezing point of colloidal solution is lower than true solution at same concentration of a solute
- (c) Colloidal particles can pass through ordinary filter paper
- (d) When excess of electrolyte is added to colloidal solution, colloidal particle will be precipitated

Ans. (b)

45. (b) (a) When silver nitrate solution is added to potassium iodide solution, a negatively charged colloidal solution is formed due to selective adsorption of  $I^-$  ion from the dispersion medium. However, if the order of addition is reversed, i.e, potassium iodide solution is added to silver nitrate solution, due to selective adsorption of  $Ag^+$  ion from the dispersion medium, a positively charged colloidal solution is obtained.
- (b) Freezing point of colloidal solution is same as that of true solution at same concentration of a solute. The depression in freezing point is a colloidal property and depends on the number of solute particles and independent of size or shape of solute particles.
- (c) Colloidal particles are so small that they can pass through ordinary filter paper. Also, they cannot be seen with ordinary microscope.
- (d) When excess of electrolyte is added to colloidal solution, colloidal particle will be precipitated. Although electrolytes in minute quantities are necessary for the stability of colloids, they cause coagulation of disperse phase if present in large quantities.

