Viva Questions with Answers on Determination of Melting point

1. Define melting point.

Ans. It is defined as the constant temperature at which the solid and the liquid phases of sub¬stance coexist.

2. How is the determination of melting point useful ?

Ans. It helps us to :

(i) identify unknown substances ;

(ii) know whether a compound is pure or not.

3. How does the determination of melting point help us know about the purity of the compound ?

Ans. Melting point indicates the purity of a substance. If a substance contains moisture or some other impurity, then its melting point is usually lowered. A sharp melting point indicates a pure substance.

4. What is sharp melting point ?

Ans. Melting point of a solid is said to be sharp if it melts completely within a range of 1°C.

5. Why do pure solids possess sharp melting point ?

Ans. A pure solid has same force of attraction between particles at different places and hence melts at a constant temperature.

6. What is the effect of impurities on the melting point of solids ?

Ans. Impurities lower the melting point of a solid.

7. Can we heat the capillary tube directly for the determination of melting point ?

Ans. No, because direct heating would result in uneven and fast heating.

8. Can any other liquid be used in place of liquid paraffin to determine the melting point ?

Ans. Yes, concentrated H2S04 or silicone oils can be used to determine the melting point.

9. Why is the melting point of benzamide more than that of acetamide ?

Ans. Benzamide and acetamide contain same functional group, but the molecular mass of benzamide is more than that of acetamide. As a result benzamide has stronger intermolecular forces and hence has higher melting point.

10. Why different solids have different melting points ?

Ans. Melting point depends upon intermolecular forces existing in the solid state. Since different solids have intermolecular forces of different strength, their melting points are different.