

Chapter 1

The Solid State

(Assertion and Reason Questions)

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

Q.1. Assertion : Graphite is an example of tetragonal crystal system.

Reason : For a tetragonal system, $a = b \neq c$, $\alpha = \beta = 90^\circ$, $\gamma = 120^\circ$.

Q.2. Assertion : No compound has both Schottky and Frenkel defects.

Reason : Both defects change the density of the solid.

Q.3. Assertion : Stability of a crystal is reflected in the magnitude of its melting.

Reason : The stability of a crystal depends upon the strength of the interparticle attractive force.

Q.4. Assertion : Due to Frenkel defect, there is no effect on the density of the crystalline solid.

Reason : In Frenkel defect, no cation or anion leaves the crystal.

Q.5. Assertion : On heating ferromagnetic or ferrimagnetic substances, they become paramagnetic.

Reason : The electrons change their spin on heating.

Q.6. Assertion : In close packing of spheres, a tetrahedral void is surrounded by four spheres whereas an octahedral void is surrounded by six spheres.

Reason : A tetrahedral void has a tetrahedral shape whereas an octahedral void has an octahedral shape.

-X-X-X-

ANSWER KEY

Q.1 : (d)

Q.2 : (d)

Q.3 : (a)

Q.4 : (a)

Q.5 : (a)

Q.6 : (c)