

CUCET Sample Paper: Chemistry

The statement(s) regarding defects in solids is (are)

- A) Frenkel defect is usually favoured by a very small difference in the size of cation and anion
- B) Trapping of an electron in the lattice leads to the formation of F-centre.
- C) Frenkel defect is a dislocation defect
- D) Schottky defects have no effect on physical properties of solids

2. Of the following, the compound that obeys the octet rule is

- A) CO_2
- B) BCl_3
- C) PCl_5
- D) OsF_6

3. Using VSEPR theory, the number of lone pairs in PCl_5 , IF_5 , SOF_4 and XeOF_4 are

- A) 0, 1, 0 and 1
- B) 0, 0, 1 and 1
- C) 1, 1, 0 and 0
- D) 1, 0, 1 and 0

4. The first law of thermodynamics is conservation of

- A) momentum
- B) energy
- C) Both a and b
- D) mass

5. The fuel cell reaction generates electricity directly from H_2 and O_2 . The net reaction is $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$. What potential should the battery generate (under standard conditions)?

- A) 0.40
- B) 0.43
- C) 0.68
- D) 1.23

6. Which factors would increase the rate of a chemical reaction?

- A) I. Increasing the temperature.
- B) II. Removing products as they are formed.

- C) III. Adding a catalyst.
- D) I and III and III (I, II and III only)

7. Going down in a group from F to I, which of the following property increases?

- A) ionic radius
- B) electronegativity
- C) ionization energy
- D) oxidizing power

8. Which is the best reducing agent?

- A) Li
- B) Na
- C) Rb
- D) Cs

9. Red and white phosphorus will differ but not in

- A) Smell
- B) reaction with HNO_3
- C) solubility in CH_3
- D) exhibiting phosphorescence

10. Which of the following bonds has the least energy?

- A) O-O
- B) S-S
- C) Se-Se
- D) Te-Te