Unit 13 - Week 10 : Common Crystal Structures

Assignment 10

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. Due on 2019-04-10, 23:59 IST.

1) Of the compounds given below, the one that is usually found in hexagonal system is

- ZnS
- GaN
- CaF₂
- Na₂O

No, the answer is incorrect.
Score: 0
Accepted Answers: GaN

2) The crystal structure of CaF₂ is

- ccp cations with anions in tetrahedral voids
- ccp anions with cations in tetrahedral voids
- hcp cations with anions in octahedral voids
- hcp cations with anions in tetrahedral voids

No, the answer is incorrect.
Score: 0
Accepted Answers: ccp cations with anions in tetrahedral voids

3) In the rock salt structure, the number of cations closest to another cation is

- 4

No, the answer is incorrect.
Score: 0
4) Of the following structures below, the one that can be described as hcp anions with cations in octahedral voids is

- GaN
- CsCl
- NiAs
- None of the other choices

No, the answer is incorrect.
Score: 0
Accepted Answers:
NiAs

5)
Consider a cubic CsCl unit cell of side $a$. The nearest distance between a Cs$^+$ ion and a Cl$^-$ ion is
6) Consider the Zinc blende structure. The coordination polyhedra of this structure about a cation is a/an

- tetrahedron
- octahedron
- distorted octahedron
- none of the other choices

No, the answer is incorrect.
Score: 0
Accepted Answers:
tetrahedron

7) The element that crystallizes in a simple cubic structure is

- Ni
- Fe
- C
- Po

No, the answer is incorrect.
Score: 0
Accepted Answers:
Po

8) If \( a \) is the nearest distance between Ga ions in GaN and we assume an ideal wurtzite structure for GaN, the nearest distance between Ga and N ions is equal to

- \( a/2 \)
- \( a\sqrt{3}/2 \)
- \( a\sqrt{2}/2 \)
- \( a\sqrt{3}/8 \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
\( a\sqrt{3}/8 \)

If the distance between two nearest neighbor zinc ions in ZnS is \( a \), then the nearest distance between...
9) A zinc and a sulphide ion is

- \( a\sqrt{3}/4 \)
- \( a\sqrt{3}/2 \)
- \( a\sqrt{3}/2 \)
- None of the other choices

No, the answer is incorrect.
Score: 0
Accepted Answers:
None of the other choices

10) Consider the \( \text{Na}_2\text{O} \) crystal for which the distance between two nearest neighbor oxide ions is \( a \). The distance between two nearest neighbor Na ions is

- \( a \)
- \( a/2 \)
- \( a\sqrt{2} \)
- \( a/\sqrt{2} \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
\( a/\sqrt{2} \)