Week 8 - Assignment 8

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-03-27, 23:59 IST.

1) What is the volume of the unit cell (Angstrom cube) of a monoclinic system with a= 10 Angstrom, b= 5 Angstrom, c= 20 Angstrom, and beta = 115 degrees 

- 1000
- 906.3
- 1006.3
- 1000.3

No, the answer is incorrect.
Score: 0
Accepted Answers: 906.3

2) Pure Au and pure Cu are both cubic with atoms at 0 0 0, 0 1/2 1/2, 1/2 0 1/2 and 1/2 1/2 0. The compound Cu3Au is also cubic with Au atoms at 0 0 0 and Cu atoms at 0 1/2 1/2, 1/2 0 1/2 and 1/2 1/2 0. What is the lattice types of Au, Cu, and Cu3Au?

- F, F, F
- F, F, I
- F, F, C
- F, F, P

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

3) What is the difference in Bragg angle Theta for the alpha1 and alpha2 reflexions from the Cu Kalpha1 (Lambda = 1.54050 Angstrom) and Cu Kalpha2 (Lambda = 1.54436 Angstrom) 2 points

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(i) 0.75 degree (ii) 2.55 degree

No, the answer is incorrect.
Score: 0

Accepted Answers:
(i) 0.25 degree (ii) 2.05 degree

4) What is the total number of lattice points associated with each lattice type (i) C, (ii) F, (iii) I, (iv) R(hexagonal axes)?

(i) 2, (ii) 4, (iii) 2, (iv) 3
(i) 2, (ii) 3, (iii) 2, (iv) 3
(i) 2, (ii) 1, (iii) 1, (iv) 1
(i) 2, (ii) 3, (iii) 3, (iv) 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
(i) 2, (ii) 4, (iii) 2, (iv) 3

5) What is the relationship between the phase difference and path difference for X-Rays?

Path Difference = Phase Difference * 2π
Path Difference = Phase Difference * π
Phase Difference = Path Difference * π
Phase Difference = Path Difference * 2π

No, the answer is incorrect.
Score: 0

Accepted Answers:
Phase Difference = Path Difference * 2π

6) What is the Intensity of a 420 reflexion for a CsCl Molecule, where Cs is at 0,0,0 and Cl is at 1/2,1/2,1/2? [f for Cs is 28 and f for Cl is 7]

2809
784
961
1225

No, the answer is incorrect.
Score: 0

Accepted Answers:
1225

7) What is the relationship between Intensity I(hkl) and the Structure Factor F(hkl) for a given reflection?

Intensity is Inversely Proportional to Square of Structure Factor
Intensity is Directly Proportional to Square of Structure Factor
Intensity is Directly Proportional to Cube of Structure Factor
None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Intensity is Directly Proportional to Square of Structure Factor