

Unit 11 - Week 8 : X-ray Diffraction and Concepts related to X-ray Diffraction

Register for Certification exam	Assignment 8
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Course outline	The due date for submitting this assignment has passed.As per our records you have not submitted thisDue on 2019-03-27, 23:59 IST.assignment.
How to access the portal	1) For a cubic unit cell, the symbol <110> represents 1 point
Practice	A Miller plane with intercepts $1,1,\infty~$ along X,Y and Z axes respectively.
Week 1 : Solid State And Solid State Materials	A direction along the vector $\hat{i}+\hat{j}$
Week 2 Unit Cells And Lattices	The family of equivalent directions along $\hat{i}+\hat{k},\hat{j}+\hat{k}$ and $\hat{i}+\hat{k}$
Week 3 : Symmetry In Crystals Part 1	No, the answer is incorrect. Score: 0
Week 4 : Symmetry in Crystals Part 2	Accepted Answers:The family of equivalent directions along $\hat{i} + \hat{k}$, $\hat{j} + \hat{k}$ and $\hat{i} + \hat{k}$ 2) For a triclinic cell, the symbol {100} represents1 point
Week 5 : Crystal Systems, Point Groups and Space Groups	The Miller plane (100) The family of Miller planes (100), (010) and (001)
Week 6 : Crystallographic Notations	The direction along the first crystallographic axis $ec{a}_1$ The family of directions along the three crystallographic axes
Week 7 : Coordination number, voids, defects in	No, the answer is incorrect. Score: 0 Accepted Answers:

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Solid State Chemistry - - Unit 11 - Week 8 : X-ra...

Luckur 8: Miler Indices Miler Indices Soften Planes, Miler Indices Soften Planes Systems, Distance between Planes Lecture 38: Reciprocal Latice View offferent planes unrelated to each other by 120 degree rotation Reciprocal Latice View offferent planes related to each other by 120 degree rotation No, the answer is incorrect. Soften Planes Lecture 38: Reciprocal Latice View offferent planes related to each other by 120 degree rotation No, the answers: the same plane Lecture 39: Reciprocal Latice System Lecture 40: Review of week 8, Practice Problems Solution Week 12: Theracion Structures Week 12: Theory of Electronic Structure of Structure of	related to X-ray	The Miller indices for this plane are (11∞)	
	Dimaction		
Miler Planes, The answer is incorrect. • Lecture 37 : Accepted Answers: The Hexagonal The information given cannot be correct Systems, Distance Planes • the same plane • Lecture 33 : • two different planes unrelated to each other viftaction, Brains • Lecture 33 : • two different planes related to each other by 120 degree rotation • No, the answer is incorrect. • two different planes related to each other by 60 degree rotation • Lecture 33 : • two different planes related to each other by 60 degree rotation • Lecture 33 : • two different planes related to each other by 60 degree rotation • Lecture 33 : • two different planes related to each other by 60 degree rotation • Lecture 40 : • Accepted Answers: • Problems • (b same plane • Quiz : Assignment 8 • Solution • (b same plane • Week 13 : • (c same plane • Week 13 : • (c same plane • (c same plane • (b same plane • (c same plane • (b same plane • (c same plane • (c same plane • (c same plane • (c same plane<	Lecture 36 :	The information given cannot be correct	
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Structure of Solids, Part 2	Electronic		
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For a hexagonal sytem, the planes, $(10ar{1}2)\,$ and $(ar{1}102)\,$ are

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2423 2423

two planes that are not related to each other by symmetry	
two planes that are equivalent to each other due to the hexagonal symmetry	
two planes that are parallel to each other	
two planes that are perpendicular to each other	R
No, the approximation incorrect	
Score: 0	200
Accepted Answers: two planes that are equivalent to each other due to the hexagonal symmetry	æ
6) Of the planes in a cubic system (221), (222), (311) and (301), the Miller planes with the smallest interplanar distance is	ing
0 (221)	
(222)	<u>en s</u>
(311) (311)	
(310)	
No, the answer is incorrect. Score: 0	
Accepted Answers:	
(222)	
7) Consider lattice with lattice translation vectors given $a/2(\hat{i}+\hat{j}-\hat{k})$, $a/2(\hat{j}+\hat{k}-\hat{i})$ and $a/2(\hat{k}+\hat{i}-\hat{j})$. The reciprocal lattice for this lattice is	int
a BCC lattice of size $2\pi/a$	
an FCC lattice of size $2\pi/a$	
\Box	
an Fee fattice of size π/a	
The of the other choices	
No, the answer is incorrect. Score: 0	
Accepted Answers:	
none of the other choices	
⁸⁾ A certain crystal has unit cell made up of the vectors $a\hat{i}, -a/2\hat{i} + a\sqrt{3}/2\hat{j}$ and $c\hat{k}$. 1 point The volume of the cell formed by the reciprocal lattice translation vectors is equal to	int
$\frac{8\pi^3}{a^2c}$	
$\frac{16\pi^3}{a^2c}$	
$\frac{8\pi^3}{a^2c\sqrt{3}}$	

None of the other choices

No, the answer is incorrect. Score: 0	
Accepted Answers: None of the other choices	
$_{9)}$ The angle between Miller planes (120) and (210) in a cubic system is (in degrees)) 1 point
• o	
090	
45	_
None of the other choices	
No, the answer is incorrect. Score: 0	
Accepted Answers: None of the other choices	
10) A certain crystal is observed to show a peak at θ = 32.7 degrees in an XRD patter XRay radiation of wavelength 1.5418 Anstroms is used. The cyrstal is known to be lattice of side 3.19 Angstroms. The Miller indices of the lattice planes corresponding to peak angle are	ern when 1 poi be a cubic the observed
(111)	
None of the other choices	
No, the answer is incorrect.	
Score: 0	
Accepted Answers: (210)	

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