

X

NPTEL

reviewer2@nptel.iitm.ac.in ▼

Courses » Fundamentals of X-ray diffraction and Transmission electron microscopy

Announcements Course Ask a Question Progress



Unit 3 - Week 2

Course outline

How to access the portal

Week 1

Week 2

Lecture 4 - Diffraction relationship with reciprocal space

Lecture 5 - X-ray scattering

Lecture 6 - Factors affecting intensities of X-ray peaks

Quiz : Week 2 - Assignment

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 2 - Assignment

The due date for submitting this assignment has passed. **Due on 2016-08-12, 22:00 IST**
As per our records you have not submitted this assignment.

1) What does a point in reciprocal space correspond to in real space

1 point

- Motif
- Plane
- Unit cell
- Crystal structure

No, the answer is incorrect.

Score: 0

Accepted Answers:

Plane

2) What is defined as the locus of the farthest points of the Ewald sphere when rotated in all orientations

1 point

- Finite sphere
- Limiting sphere
- Closed sphere
- Bound sphere

No, the answer is incorrect.

Score: 0

Accepted Answers:

Limiting sphere

3) In the equation for the lattice vectors of a reciprocal space, what does the denominator signifies?

1 point

- Unit cell dimensions
- Unit cell volume
- Real lattice parameters
- Interplanar spacing

No, the answer is incorrect.

Score: 0

Accepted Answers:

Unit cell volume

4) Compton effect is.....

1 point

- Inelastic collision of photon and electron
- Coherent scattering of photon and electron

- Elastic collision of photon and electron
- Incoherent scattering of photon and electron

No, the answer is incorrect.

Score: 0

Accepted Answers:

Elastic collision of photon and electron

5) describes the efficiency of scattering of given atom in given direction

1 point

- Lorentz-Polarization factor
- Temperature factor
- Atomic scattering factor
- Multiplicity factor

No, the answer is incorrect.

Score: 0

Accepted Answers:

Atomic scattering factor

6) What is the nature of relationship between the intensity of the diffracted beam (I) and the structure factor (F)?

1 point

- Linear
- Inverse
- Cubic
- Quadratic

No, the answer is incorrect.

Score: 0

Accepted Answers:

Quadratic

7) What is the necessary conditions (in terms of miller indices) for the occurrence of constructive interference in an FCC crystal.

1 point

- h, k, l should be mixed
- $h+k+l$ should be even
- $h+k+l$ should be odd
- h, k, l should be unmixed

No, the answer is incorrect.

Score: 0

Accepted Answers:

h, k, l should be unmixed

8) Which one of the following assumption was made in Kinematic theory of diffraction?

1 point

- No interaction between incident and scattered rays
- Scattered waves do not lose energy
- Waves are scattered only once
- All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of the above

9) In Laue method of diffraction experiment _____ is fixed and _____ is varied

1 point

- θ and λ
- λ and θ
- both λ and θ is fixed
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

θ and λ

10 Debye-Scherrer camera was first employed for.....?

1 point

- Single crystal diffraction
- Powder diffraction
- Spectroscopy
- Imaging

No, the answer is incorrect.

Score: 0

Accepted Answers:

Powder diffraction



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