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NPTEL

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

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Unit 5 - Week 4



Course outline

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Week 1

Week 2

Week 3

Week 4

- Lecture 10 - Indexing of diffraction pattern, Quantitative analysis
- Lecture 11 - Indexing and Quantitative analysis- continuation, Residual stress measurements
- Lecture 12 - XRD and Residual stress measurement- lab demonstration
- Quiz : Week 4 - Assignment

Week 5

Week 6

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Week 4 - Assignment

The due date for submitting this assignment has passed. **Due on 2016-08-21, 22:00 IST**
As per our records you have not submitted this assignment.

1) The sequence 3,8,11,16...etc represents the value of 's' for which crystal system? **1 point**

- Simple cubic
- Body centered cubic
- Face centered cubic
- Diamond cubic

No, the answer is incorrect.

Score: 0

Accepted Answers:
Diamond cubic

2) Which among the following is a forbidden value for 's' in the case of a simple cubic system? **1 point**

- 5
- 9
- 7
- 8

No, the answer is incorrect.

Score: 0

Accepted Answers:
7

3) $A(h^2+k^2)+Cl^2$, represents the value of \sin^2 (theta) for which crystal system? **1 point**

- Cubic
- Tetragonal
- Hexagonal
- Monoclinic

No, the answer is incorrect.

Score: 0

Accepted Answers:
Tetragonal

4) 'Direct comparison method' in X-ray diffraction is used for.....? **1 point**

- Qualitative analysis
- Indexing
- Quantitative analysis
- Strain measurements

No, the answer is incorrect.

Score: 0

Accepted Answers:

Quantitative analysis

5) A sample having Iron and Tungsten in equal proportions is subjected to X-ray diffraction. The diffraction pattern will have the peaks corresponding to both the elements. Which element will have high intensity peaks? **1 point**

- Iron
- Tungsten
- Both will have equal intensity peaks
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Tungsten

6) Quantitative analysis by X-ray diffraction is based on.....?

- Position of peaks in the pattern
- Intensity of peaks in the pattern
- Width of peaks
- Number of peaks

No, the answer is incorrect.

Score: 0

Accepted Answers:

Intensity of peaks in the pattern

7) For the determination of residual stress by X-ray diffraction, it is assumed that the sample is..... **1 point**

- Isotropic
- Anisotropic
- Stationary
- Single Crystal

No, the answer is incorrect.

Score: 0

Accepted Answers:

Isotropic

8) Which among the following methods is used for the determination of residual stress in a sample? **1 point**

- sin (psi) method
- sin (theta) method
- sin² (psi) method
- sin² (theta) method

No, the answer is incorrect.

Score: 0

Accepted Answers:

sin² (psi) method

9) In a Bragg-Brentano geometry, the divergent and diffracted beams get focused at.....? **1 point**

- Two different circles
- Same point
- Same line
- A fixed radius from the specimen



No, the answer is incorrect.

Score: 0

Accepted Answers:

A fixed radius from the specimen

10) In a Bragg-Brentano diffractometer, what is the nature of the relative motion between the X-ray source and detector? **1 point**

- Both rotates in same direction by same angle with respect to the specimen
- Both rotates in same direction by different angle with respect to the specimen
- Both rotates in opposite directions by same angle with respect to the specimen
- Both rotates in opposite directions by different angle with respect to the specimen

No, the answer is incorrect.

Score: 0

Accepted Answers:

Both rotates in opposite directions by same angle with respect to the specimen



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