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NPTEL

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

Announcements Course Ask a Question Progress

## Unit 4 - Week 3



### Course outline

How to access the portal

Week 1

Week 2

Week 3

Lecture 7 - Factors affecting intensities of X-ray peaks- continuation

Lecture 8 - Effect of crystallite size and strain on intensity of X-rays

Lecture 9 - Profile fit, Factors affecting peak brodening

Quiz : Week 3 - Assignment

Week 4

Week 5

Week 6

Week 7

Week 8

## Week 3 - Assignment

The due date for submitting this assignment has passed. **Due on 2016-08-14, 22:00 IST**  
As per our records you have not submitted this assignment.

1) For a cubic crystal system, the multiplicity factor for the {111} family is?

1 point

- 6  
 12  
 8  
 4

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

8

2) The unit of linear absorption coefficient is.....?

1 point

- $m^{-1}$   
 m  
  $m^2$   
  $m^{1/2}$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$m^{-1}$

3) What is the nature of relationship between Lorentz-Polarization factor with bragg angle?

1 point

- Increases linaerly  
 Deacrees linaly  
 Decreases parabolically to a value and then increases  
 Increases parabolically to a value and then decreases

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Decreases parabolically to a value and then increases*

4) The temperature factor pertaining to the intensity of the diffracted beams depends on.....?

1 point

- Amplitude of thermal vibrations  
 Resonance  
 Diffusion

- Dispersion

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Amplitude of thermal vibrations*

5) Scherrer formula is used to calculate the.....?

1 point

- Grain size  
 Lattice parameter  
 Crystallite size  
 Particle size

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Crystallite size*

6) With the decrease in the crystallite size, what will happen to the diffraction peaks?

1 point

- It will shift  
 It will broaden  
 It will disappear  
 None of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*It will broaden*

7) Development of uniform strain in a crystal will lead to.....?

1 point

- Peak shifting  
 Peak broadening  
 Asymmetry in the peaks  
 None of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Peak shifting*

8) In the Williamson-Hall plot, the slope of the straight line gives the .....?

1 point

- Microstrain in the material  
 Crystallite size  
 Lattice parameter  
 Interplanar spacing

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Microstrain in the material*

9) Which among the following factors cause asymmetry in the diffraction pattern?

1 point

- Crystallite size  
 Microstrain  
 Stacking faults  
 Alloying

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**



*Stacking faults*

10 Which among the following profile fits is used for a Strain broadened peak?

1 point

- Lorentz fit
- Gaussian fit
- Voigt fit
- Pearson fit

**No, the answer is incorrect.****Score: 0****Accepted Answers:***Lorentz fit*[Previous Page](#)[End](#)

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