

9/16/2020

National Testing Agency

Question Paper Name :	X RAY Crystallography 15 Sept
Subject Name :	X-RAY Crystallography
Creation Date :	2020-09-15 13:26:34
Duration :	180
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Display Marks:	Yes
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes

X-RAY Crystallography

Group Number :	1
Group Id :	89951422
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	100
Is this Group for Examiner? :	No

X-RAY Crystallography

Section Id :	89951422
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50

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Number of Questions to be attempted :	50
Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	89951435
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 8995141800 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 2 Wrong Marks : 0

For diffraction to occur, the condition for the slit width d and wavelength λ should be

- a. Wavelength shorter than the slit width
- b. Wavelength longer than the slit width
- c. Comparable
- d. Slit width should be integral multiple of wavelength

Options :

- 8995147160. 1
- 8995147161. 2
- 8995147162. 3
- 8995147163. 4

Question Number : 2 Question Id : 8995141801 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical Correct Marks : 2 Wrong Marks : 0

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X-ray diffraction is mainly caused by

- a. Electrons
- b. Neutrons
- c. X-rays
- d. Nucleus

Options :

8995147164. 1

8995147165. 2

8995147166. 3

8995147167. 4

Question Number : 3 Question Id : 8995141802 Question Type : MCQ Option Shuffling : No Display Quest

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Laue's equations in a lattice arise due to

- a. Interference
- b. Polarization
- c. Reflection
- d. Refraction

Options :

8995147168. 1

8995147169. 2

8995147170. 3

8995147171. 4

Question Number : 4 Question Id : 8995141803 Question Type : MCQ Option Shuffling : No Display Quest

Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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In the Bragg's equation when θ is 0, then the incident ray

- a. Deviates from the normal
- b. Deviates close to normal
- c. The d spacing is zero
- d. Goes unaffected

Options :

8995147172. 1

8995147173. 2

8995147174. 3

8995147175. 4

Question Number : 5 Question Id : 8995141804 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The sphere constructed using $1/\lambda$ as radius in diffraction is called

- a. Limiting sphere
- b. Ewald sphere
- c. Atomic sphere
- d. Laue sphere

Options :

8995147176. 1

8995147177. 2

8995147178. 3

8995147179. 4

Question Number : 6 Question Id : 8995141805 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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For a given unit cell with parameters $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma$, what will happen to the crystal system when $\alpha = \beta = \gamma = 90^\circ$.

- a. Monoclinic
- b. Trigonal
- c. Orthorhombic
- d. Cubic

Options :

8995147180. 1

8995147181. 2

8995147182. 3

8995147183. 4

Question Number : 7 Question Id : 8995141806 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The measurable reflections are within the limit of

- a. Laue sphere
- b. Sphere of reflection
- c. Intersection of Ewald sphere and Limiting sphere
- d. Sphere of the wavelength.

Options :

8995147184. 1

8995147185. 2

8995147186. 3

8995147187. 4

Question Number : 8 Question Id : 8995141807 Question Type : MCQ Option Shuffling : No Display Question : Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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For a given value of θ , what will happen to the diffracted intensity in X-ray diffraction experiments.

- a. Less the electron cloud more the intensity
- b. More the electron cloud, more the intensity
- c. Independent of the electrons
- d. Independent of the nucleus

Options :

- 8995147188. 1
- 8995147189. 2
- 8995147190. 3
- 8995147191. 4

Question Number : 9 Question Id : 8995141808 Question Type : MCQ Option Shuffling : No Display Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

The total number of point groups for the seven crystal systems are

- a. 230
- b. 32
- c. 7
- d. 4

Options :

- 8995147192. 1
- 8995147193. 2
- 8995147194. 3
- 8995147195. 4

Question Number : 10 Question Id : 8995141809 Question Type : MCQ Option Shuffling : No Display Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

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The direct methods use the

- a. The amplitudes
- b. The square of the amplitudes
- c. The square root of the amplitudes
- d. only the phase angles

Options :

8995147196. 1

8995147197. 2

8995147198. 3

8995147199. 4

Question Number : 11 Question Id : 8995141810 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The number of unique point groups for the Cubic system are

- a. 7
- b. 4
- c. 6
- d. 5

Options :

8995147200. 1

8995147201. 2

8995147202. 3

8995147203. 4

Question Number : 12 Question Id : 8995141811 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Which of the pair of point groups could be converted to hexagonal system.

- a. $3/m, 3/mm$
- b. $3m, 3/mm$
- c. $-3, 3/m$
- d. $3m, 3/m$

Options :

8995147204. 1

8995147205. 2

8995147206. 3

8995147207. 4

Question Number : 13 Question Id : 8995141812 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What is the unique way to determine the space groups $P2_1$ from Pm .

- a. The systematic absences
- b. From the unit cell
- c. From the point group
- d. Not possible

Options :

8995147208. 1

8995147209. 2

8995147210. 3

8995147211. 4

Question Number : 14 Question Id : 8995141813 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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What are the centrosymmetric point groups in a trigonal crystal system.

- a. $\bar{3}, \bar{3}m$
- b. $\bar{3}, 3/m$
- c. $3/m, 3/m$
- d. $\bar{3}m, 3/m$

Options :

8995147212. 1

8995147213. 2

8995147214. 3

8995147215. 4

Question Number : 15 Question Id : 8995141814 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Where is the 2_1 screw along b-axis located in the space group $P2_12_12_1$.

- a. 000 along b
- b. 000 along c
- c. c/4 along b
- d. None of the above

Options :

8995147216. 1

8995147217. 2

8995147218. 3

8995147219. 4

Question Number : 16 Question Id : 8995141815 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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What is the third symmetry axis generated by operating two 2-fold symmetry axes in an orthogonal system.

- a. Mirror
- b. Inversion
- c. 2-fold
- d. None of the above

Options :

8995147220. 1

8995147221. 2

8995147222. 3

8995147223. 4

Question Number : 17 Question Id : 8995141816 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Which of the following terms is present in the d-spacing calculation for a hexagonal system in reciprocal space.

- a. $\cos \gamma^*$
- b. $\cos \alpha^*$
- c. $\cos \beta^*$
- d. No $\alpha^* \gamma^* \beta^*$

Options :

8995147224. 1

8995147225. 2

8995147226. 3

8995147227. 4

Question Number : 18 Question Id : 8995141817 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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In a given unit cell with parameters $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma \neq 90^\circ$, what is the resulting crystal system when $a=b=c$ and $\alpha=\beta=\gamma \neq 90^\circ$.

- a. Cubic
- b. Trigonal
- c. Orthorhombic
- d. Hexagonal

Options :

- 8995147228. 1
- 8995147229. 2
- 8995147230. 3
- 8995147231. 4

Question Number : 19 Question Id : 8995141818 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The scattering power of an atom with respect to $\sin\theta/\lambda$ is

- a. Constant
- b. Increases linearly
- c. Decreases linearly
- d. Decreases exponentially

Options :

- 8995147232. 1
- 8995147233. 2
- 8995147234. 3
- 8995147235. 4

Question Number : 20 Question Id : 8995141819 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Where will an atom show minimum thermal parameter.

- a. At 10 K
- b. At 10 °C
- c. At room temperature
- d. At 0 °C

Options :

- 8995147236. 1
- 8995147237. 2
- 8995147238. 3
- 8995147239. 4

Question Number : 21 Question Id : 8995141820 Question Type : MCQ Option Shuffling : No Display Que
Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

What do we call a^* b^* c^* and α^* β^* γ^* in crystallography

- a. * Axis and * Angles
- b. Reciprocal lattice unit cell dimensions
- c. $a^* = 1/a$, $b^* = 1/b$, $c^* = 1/c$
- d. $\alpha^* = 1 - \alpha$, $\beta^* = 1 - \beta$, $\gamma^* = 1 - \gamma$

Options :

- 8995147240. 1
- 8995147241. 2
- 8995147242. 3
- 8995147243. 4

Question Number : 22 Question Id : 8995141821 Question Type : MCQ Option Shuffling : No Display Que
Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

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What is the physical parameter used in the Patterson function.

- a. The square of the amplitude
- b. The amplitude
- c. The phase angle
- d. The Bragg angle

Options :

8995147244. 1

8995147245. 2

8995147246. 3

8995147247. 4

Question Number : 23 Question Id : 8995141822 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What will be the equivalent point generated after the operation of a 2-fold rotation parallel to b-axis on the given point x,y,z .

- a. $-x,-y,z$
- b. $x,-y,-z$
- c. $x,-y,z$
- d. $-x,y,-z$

Options :

8995147248. 1

8995147249. 2

8995147250. 3

8995147251. 4

Question Number : 24 Question Id : 8995141823 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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What will be the equivalent point generated after the operation of a mirror plane perpendicular to b-axis on a given point x,y,z

- a. $-x,-y,z$
- b. $x,-y,-z$
- c. $-x,y,-z$
- d. $x,-y,z$

Options :

8995147252. 1

8995147253. 2

8995147254. 3

8995147255. 4

Question Number : 25 Question Id : 8995141824 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

A glide plan involves a

- a. Reflection
- b. Translation
- c. Reflection followed by translation
- d. Rotation followed by translation

Options :

8995147256. 1

8995147257. 2

8995147258. 3

8995147259. 4

Question Number : 26 Question Id : 8995141825 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Find out the function which is minimized during the least squares refinement of a structure.

- a. $\sum_{hkl} W_{hkl} (|F_o| - |F_c|)^2$
- b. xyz
- c. θ
- d. $\rho(xyz)$

Options :

8995147260. 1

8995147261. 2

8995147262. 3

8995147263. 4

Question Number : 27 Question Id : 8995141826 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Identify the intercepts of the miller indices 222.

- a. $a/2, b/2, c/2$
- b. Half in a, twice in b, twice in c
- c. Twice the intercept in a, b, c
- d. Parallel to a, b, c

Options :

8995147264. 1

8995147265. 2

8995147266. 3

8995147267. 4

Question Number : 28 Question Id : 8995141827 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Identify the relationship between θ and hkl in X-ray diffraction.

- a. θ is proportional to hkl
- b. θ is inversely proportional to hkl
- c. θ is inversely proportional $(hkl)^2$
- d. θ is independent of hkl

Options :

8995147268. 1

8995147269. 2

8995147270. 3

8995147271. 4

Question Number : 29 Question Id : 8995141828 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

How do you explain the Miller indices 200.

- a. Intercept at 'a/2' parallel to 'b' and 'c'
- b. Twice at 'a' and perpendicular to 'b' and 'c'
- c. Doesn't cut at a, b, c,
- d. Perpendicular to 'a' and parallel to 'b' and 'c'

Options :

8995147272. 1

8995147273. 2

8995147274. 3

8995147275. 4

Question Number : 30 Question Id : 8995141829 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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The value of θ in reciprocal space when $\alpha = \beta = \gamma = 90^\circ$ the equation becomes,

- a. $\theta = \sin^{-1} \lambda/2 \sqrt{(h^2 a^{*2} + k^2 b^{*2} + l^2 c^{*2} + 2 h k a^* b^* \cos \gamma^* + 2 h l a^* c^* \cos \beta^* + 2 k l b^* c^* \cos \alpha^*)}$
- b. $\theta = \sin^{-1} \lambda/2 \sqrt{(h^2 a^{*2} + k^2 b^{*2} + l^2 c^{*2})}$
- c. $\theta = \sin^{-1} \lambda/2 \sqrt{(h^2 a^{*2} + k^2 b^{*2} + l^2 c^{*2} + 2 h l a^* c^* \cos \beta^*)}$
- d. $\theta = \sin^{-1} \lambda/2 \sqrt{(h^2 a^{*2} + k^2 b^{*2} + l^2 c^{*2} + 2 h k a^* b^* \cos \gamma^*)}$

Options :

- 8995147276. 1
- 8995147277. 2
- 8995147278. 3
- 8995147279. 4

Question Number : 31 Question Id : 8995141830 Question Type : MCQ Option Shuffling : No Display Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

Find out the additional inversion symmetry generated for the space group $C2/m$.

- a. Inversion at $a/4 + b/4$
- b. Inversion at 000
- c. Inversion at $a/2 + b/2$
- d. Inversion at $\frac{1}{2} \frac{1}{2} 0$

Options :

- 8995147280. 1
- 8995147281. 2
- 8995147282. 3
- 8995147283. 4

Question Number : 32 Question Id : 8995141831 Question Type : MCQ Option Shuffling : No Display Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 2 Wrong Marks : 0

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Which of the given set belongs to the eight unique inversion centers in P-1 space group

- a. 000, $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
- b. 000,100
- c. 100,001
- d. 010,001

Options :

8995147284. 1

8995147285. 2

8995147286. 3

8995147287. 4

Question Number : 33 Question Id : 8995141832 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

What happens to the plane if one of the the Miller indeces is zero.

- a. The plane is parallel to that axis
- b. The plane is perpendicular to that axis
- c. The plane is inclined
- d. None of the above

Options :

8995147288. 1

8995147289. 2

8995147290. 3

8995147291. 4

Question Number : 34 Question Id : 8995141833 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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What will happen when a Miller index is multiplied or divided by a constant.

- a. No effect on the orientation of the plane
- b. Will become parallel to the plane
- c. Will become perpendicular to the plane
- d. Will become zero

Options :

8995147292. 1

8995147293. 2

8995147294. 3

8995147295. 4

Question Number : 35 Question Id : 8995141834 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

'a-glide' is perpendicular to

- a. b or c-axis
- b. a axis
- c. 100 plane
- d. 200 plane

Options :

8995147296. 1

8995147297. 2

8995147298. 3

8995147299. 4

Question Number : 36 Question Id : 8995141835 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Identify the symmetry elements from Harker peak $1/2\ 0\ w$

- a. 'a-glide' plane perpendicular to 'c'
- b. 2-fold axis parallel to 'c'
- c. 2_1 -screw parallel to 'c'
- d. 'b-glide' plane perpendicular to c

Options :

8995147300. 1

8995147301. 2

8995147302. 3

8995147303. 4

Question Number : 37 Question Id : 8995141836 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Identify the translation generated by a n-glide perpendicular to c-axis.

- a. $(a+b)/2$
- b. $(a+c)/2$
- c. $(b+c)/2$
- d. $a/4+b/4$

Options :

8995147304. 1

8995147305. 2

8995147306. 3

8995147307. 4

Question Number : 38 Question Id : 8995141837 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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How are the amplitude and θ related for a diffracted wave.

- a. Higher the θ higher the amplitude
- b. Lower the θ higher the amplitude
- c. Lower the θ the lower the amplitude
- d. Depends on the cell dimensions

Options :

8995147308. 1

8995147309. 2

8995147310. 3

8995147311. 4

Question Number : 39 Question Id : 8995141838 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Identify the point group belongs to the space group Cm.

- a. -2
- b. 2/m
- c. 2
- d. mmm

Options :

8995147312. 1

8995147313. 2

8995147314. 3

8995147315. 4

Question Number : 40 Question Id : 8995141839 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

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Which one of the following statement is correct in the context of powder diffraction.

- a. Same hkl will have more than one θ
- b. More than one hkl might have same θ
- c. θ and hkl are not related
- d. Intensity independent on hkl

Options :

8995147316. 1

8995147317. 2

8995147318. 3

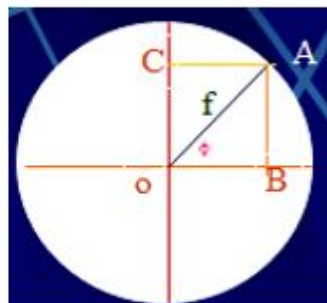
8995147319. 4

Question Number : 41 Question Id : 8995141840 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

Find out the amplitude of the wave 'f' from the given figure



- a. $f = OC$
- b. $f = \sqrt{(OB^2 + OC^2)}$
- c. $f = AB$
- d. $f = OC/OB$

Options :

8995147320. 1

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8995147321. 2

8995147322. 3

8995147323. 4

Question Number : 42 Question Id : 8995141841 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**

Identify the systematic absent condition for a primitive lattice.

- a. hkl ; $h+k+l=2n+1$
- b. $h0l$; $h+l=2n+1$
- c. $0kl$; $k+l=2n+1$
- d. None of the above

Options :

8995147324. 1

8995147325. 2

8995147326. 3

8995147327. 4

Question Number : 43 Question Id : 8995141842 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**What will be the resultant amplitude ' f_r ' when j waves with different amplitudes and phases are superimposed.

- a. $f_r = \sqrt{(\sum_j f_j \cos \delta_j)^2 + (\sum_j f_j \sin \delta_j)^2}$
- b. $f_r = \tan^{-1} \sqrt{(\sum_j f_j \cos \delta_j) / (\sum_j f_j \sin \delta_j)}$
- c. $f_r = \sqrt{(\sum_j f_j \cos \delta_j)^2} / \sqrt{(\sum_j f_j \sin \delta_j)^2}$
- d. $f_r = \sum_j f_j \cos \delta_j^2 / \sum_j f_j \sin \delta_j^2$

Options :

8995147328. 1

8995147329. 2

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8995147330. 3

8995147331. 4

Question Number : 44 Question Id : 8995141843 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**

Patterson function is always

- a. Non-centro symmetric
- b. Depends upon the system
- c. Centro symmetric
- d. Depends upon the space group

Options :

8995147332. 1

8995147333. 2

8995147334. 3

8995147335. 4

Question Number : 45 Question Id : 8995141844 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**

Where will be the mirror plane situated in 'a-glide' perpendicular to c-axis.

- a. ab plane
- b. ac plane
- c. bc plane
- d. none of the above

Options :

8995147336. 1

8995147337. 2

8995147338. 3

8995147339. 4

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Question Number : 46 Question Id : 8995141845 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**

The equivalent points for the centrosymmetric space group P-1 are

- a. $x, y, z; x, -y, z$
- b. $x, y, z; -x, -y, -z$
- c. $x, y, z; -x, y, z$
- d. $x, y, z; x, y, -z$

Options :

8995147340. 1

8995147341. 2

8995147342. 3

8995147343. 4

Question Number : 47 Question Id : 8995141846 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical****Correct Marks : 2 Wrong Marks : 0**

Which of the following conditions is valid for an orthorhombic system.

- a. $F(hkl)=F(h-k-l)$
- b. $F(hkl) \neq F(-hkl)$
- c. $F(hkl) \neq F(-h-k-l)$
- d. $F(hkl) \neq F(-hk-l)$

Options :

8995147344. 1

8995147345. 2

8995147346. 3

8995147347. 4

Question Number : 48 Question Id : 8995141847 Question Type : MCQ Option Shuffling : No Display Que**Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

9/16/2020

Correct Marks : 2 Wrong Marks : 0

In the equation for the electron density $\rho(xyz)$ when expressed as a Fourier synthesis of the structure factor, the summation is over

- a. $x y z$
- b. Scattering factor f_o
- c. Scattering angle θ
- d. hkl

Options :

- 8995147348. 1
- 8995147349. 2
- 8995147350. 3
- 8995147351. 4

Question Number : 49 Question Id : 8995141848 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

The special systematically absent condition for a C centered lattice is

- a. $h0l; h+l=2n$
- b. $h00; h=2n+1$
- c. $00l; l=2n+1$
- d. $0kl; k+l=2n+1$

Options :

- 8995147352. 1
- 8995147353. 2
- 8995147354. 3
- 8995147355. 4

Question Number : 50 Question Id : 8995141849 Question Type : MCQ Option Shuffling : No Display Que

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 2 Wrong Marks : 0

9/16/2020

What happens to the plane if the Miller index is large.,

- a. The more nearly perpendicular the plane is to that axis
- b. The more nearly parallel the plane is to that axis
- c. The plane is nearly perpendicular to the diagonal
- d. The plane is inclined at an angle of 45°

Options :

8995147356. 1

8995147357. 2

8995147358. 3

8995147359. 4