

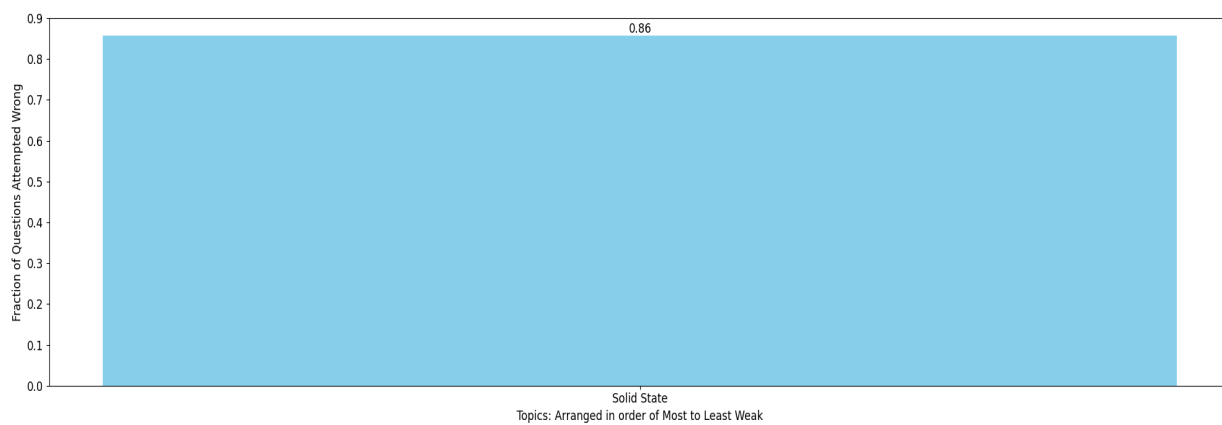
Stargazer_ Total

MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Solid State:

47. Which of the following defects is also known as dislocation defect?

(A) Frenkel defect (B) Schottky defect
(C) Non-stoichiometric defect (D) Simple interstitial defect

PROBLEMS BASED ON ELECTRICAL PROPERTIES

11. An element crystallizes in a face-centred cubic (fcc) unit cell with cell edge a . The distance between the centres of two nearest octahedral voids in the crystal lattice is: **[Jee Main, 2020]**

(A) $\frac{a}{\sqrt{2}}$ (B) $\frac{a}{2}$ (C) a (D) $\sqrt{2}a$

18. Match the crystal system / unit cells mentioned in Column I with their characteristic features mentioned in Column II. Indicate your answer by darkening the appropriate bubbles of the 4×4 matrix given in the ORS. **[JEE 2007]**

Column I

Column II

(A) simple cubic and face-centred cubic	(P) have these cell parameters $a = b = c$ and $\alpha = \beta = \gamma$
(B) cubic and rhombohedral	(Q) are two crystal systems
(C) cubic and tetragonal	(R) have only two crystallographic angles of 90°
(D) hexagonal and monoclinic	(S) belong to same crystal system.

29. The composition of a sample of wustite is $\text{Fe}_{0.93}\text{O}_{1.0}$. What percentage of iron is present in the form of Fe(III)?

10. Which statements is correct about HCP and CCP lattice
- (A) Number of tetrahedral voids are twice of octahedral holes
 - (B) 2 tetrahedral and 1 octahedral voids are present in HCP unit cell per atom.
 - (C) Tetrahedral voids = $2 \times$ octahedral voids, is valid for ccp and hcp.
 - (D) Distance between two hexagonal planes in CCP or HCP arrangement is same for a metal exist in both forms.
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