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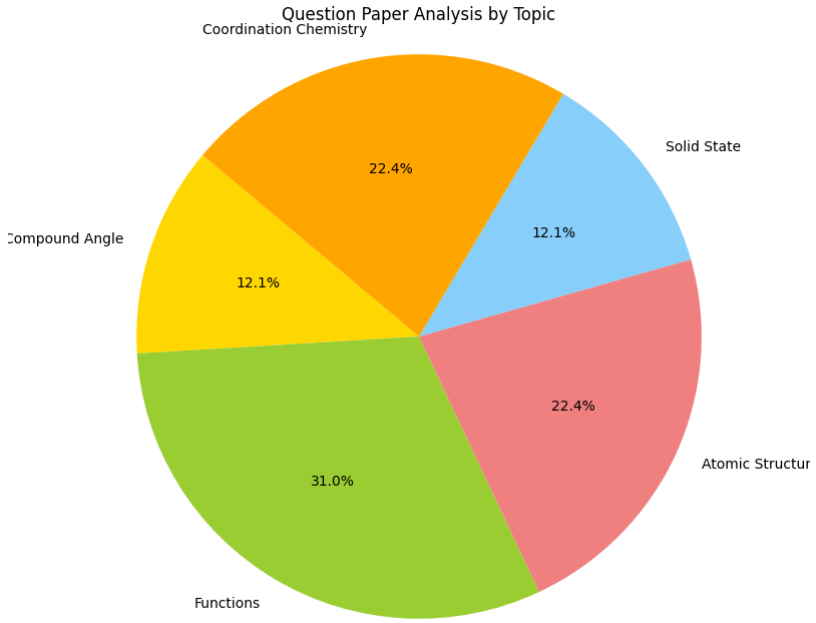
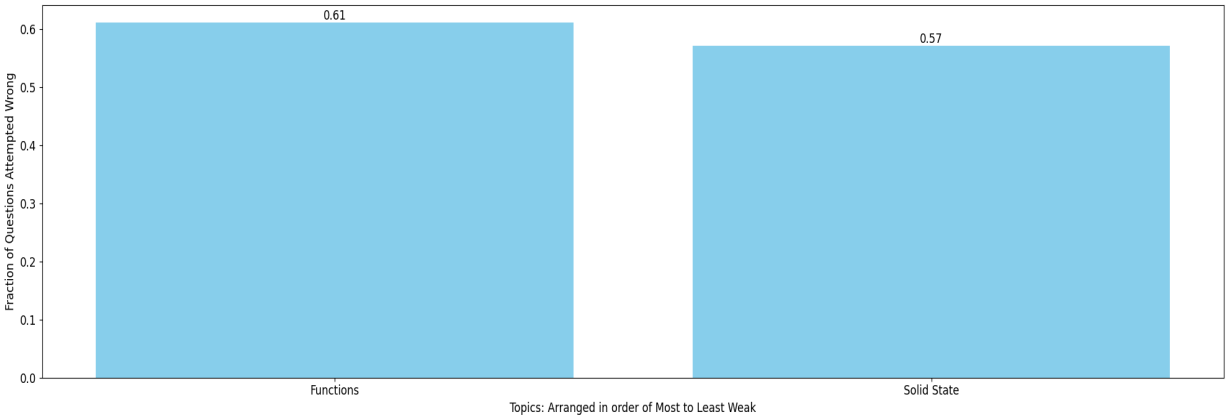
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

7. A function f: R → R is such that $f\left(\frac{1-x}{1+x}\right) = x$ for all $x \neq -1$. Prove the following.

(a) $f(f(x)) = x$

(b) $f(1/x) = -f(x), x \neq 0$ (c) $f(-x-2) = -f(x) - 2$

1. (a) Let $P(x) = x^6 + ax^5 + bx^4 + cx^3 + dx^2 + ex + f$ be a polynomial such that $P(1) = 1; P(2) = 2; P(3) = 3; P(4) = 4; P(5) = 5$ and $P(6) = 6$ then find the value of $P(7)$.

(b) Let a and b be real numbers and let $f(x) = a\sin x + b\sqrt[3]{x} + 4, \forall x \in R$.

If $f\left(\log_{10}(\log_3 10)\right) = 5$ then find the value of $f\left(\log_{10}(\log_{10} 3)\right)$.

1. Find the number of integer in the range of the function,

$$f(x) = \sqrt{\sin\frac{\pi x}{2}} + \sqrt{16 - x^2} + \sqrt{x} + \log_2(x(x-2))$$

Daily Work Sheet-2

INGLE CORRECT TYPE

. Which of the following statements are incorrect? I. If f(x) and g(x) are one to one then f(x) + g(x) is also one to one.

II. If f(x) and g(x) are one-one then f(x) · g(x) is also one-one.

III. If f(x) is odd then it is necessarily one to one.

(A) I and II only (B) II and III only

(C) III and I only (D) I, II and III

18. The number of functions f from {1,2,3, ...20} onto {1, 2,3, ... ,20} such that f(k) is a multiple of 3, whenever k is a multiple of 4 , is **[JEE - Main 2019]**

(A) (15)! × 6! (B) $5^6 \times 15$ (C) 5! × 6 ! (D) $6^5 \times (15)$!

5. If $f(x) + 2f\left(\frac{1}{x}\right) = 3x, x \neq 0$ and $S = \{x \in R: f(x) = f(-x)\}$; then S : **[JEE - Main 2016]**

(A) contains exactly one element.

(B) contains exactly two elements.

(C) contains more than two elements

(D) is an empty set.

Solid State:

27. The interstitial hole is called tetrahedral because

(A) It is formed by four spheres.

(B) Partly same and partly different.

(C) It is formed by four spheres the centres of which form a regular tetrahedron.

(D) None of the above three.

2. Calculate the density of diamond from the fact that it has face centered cubic structure with two

19. A cubic solid is made up of two elements A and B. Atoms B are at the corners of the cube and A at the body centre. What is the formula of compound?

34. Ammonium chloride crystallizes in a body centred cubic lattice with edge length of unit cell of 390 pm. If the size of chloride ion is180 pm, the size of ammonium ion would be:

[Jee-Main (online)-12]

(A) 158 pm (B) 174 pm (C) 142 pm (D) 126 pm

1. How many of the following are covalent network solids?
