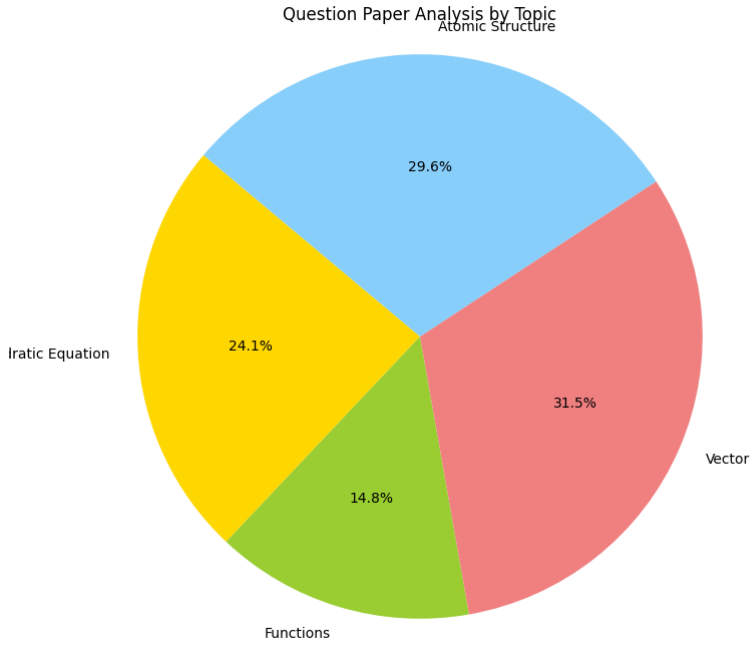
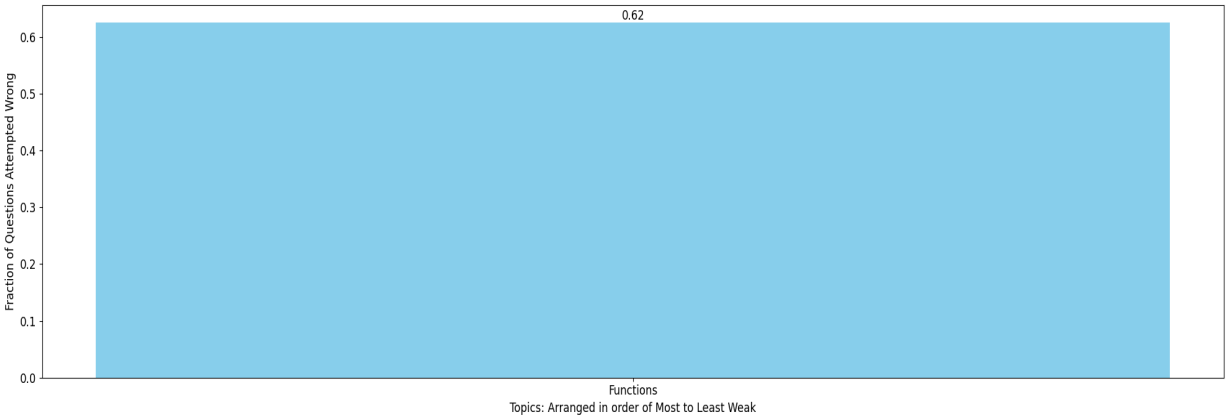
Ojasvi Gupta Total
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

41. Let $A = \{\lambda \in R : [x + 3] + [x + 4] \leq \}$, $B = \left\{x \in R : 3^x \left(\sum_{r=1}^{\infty} \frac{\angle}{10r} \right) \quad < 3^{-3x} \right\}$, where [t] Denote greatest integer function. Then **[JEE - Main 2023]**

(A) $A \subset B, A \neq B$ (B) $A \cap B = \phi$ (C) $A = B$ (D) $B \subset C, A \neq B$

11. Find whether the following functions are even or odd or none

(a) $f(x) = \log\left(x + \sqrt{1 + x^2}\right)$

(b) $f(x) = \frac{x(a^x+1)}{a^x-1}$

(c) $f(x) = \sin x + \cos x$

(d) $f(x) = x\sin^2 x - x^3$

(e) $f(x) = \sin x - \cos x$

(f) $f(x) = \frac{(1+2^x)^2}{2^x}$

(g) $f(x) = \frac{x}{e^x-1} + \frac{x}{2} + 1$

(h) $f(x) = [(x + 1)^2]^{1/3} + [(x - 1)^2]^{1/3}$

21. Let $A = \{x \in R: x \text{ is not a positive integer }\}$. Define a function $f: A \to R$ as $f(x) = \frac{2x}{x-1}$, then f is **[JEE - Main 2019]**

(A) injective but not surjective (B) not injective

(C) surjective but not injective (D) neither injective nor surjective

(5)

5. Let $f(x) = x^{135} + x^{125} - x^{115} + x^5 + 1$. If $f(x)$ is divided by $x^3 - x$ then the remainder is some function of x say $g(x)$. Find the value of $g(10)$.

17. Let a function f: $(0, \infty) \rightarrow (0, \infty)$ be defined by $f(x) = \left|1 - \frac{1}{x}\right|$. Then, f is **[JEE - Main 2019]**

(A) injective only

(B) both injective as well as surjective

(C) not injective but it is surjective

(D) neither injective nor surjective