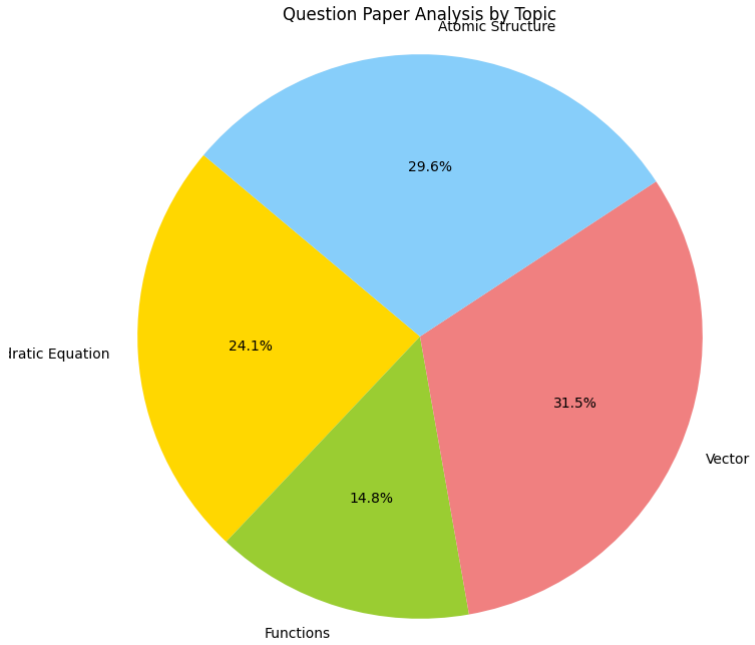
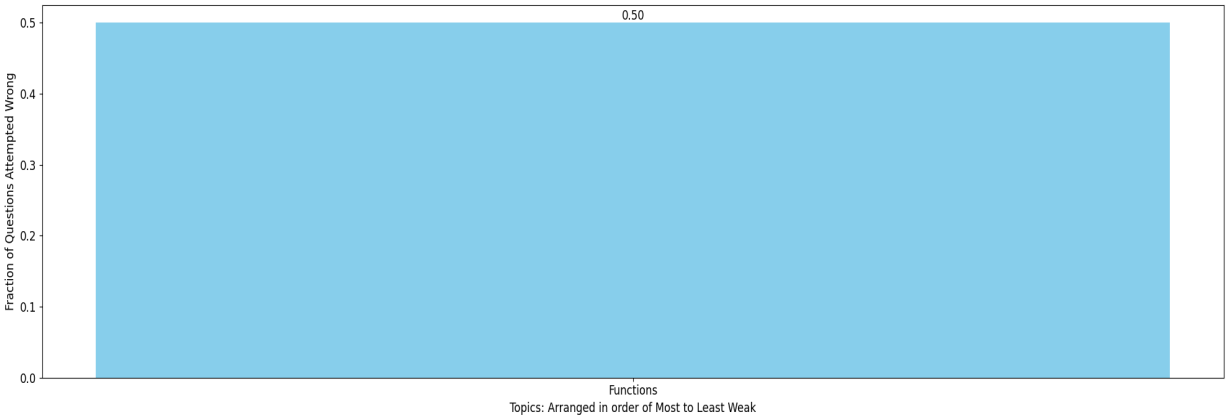
Jayansh poonia Total
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

17. Let a function f: $(0,\infty) \to (0,\infty)$ 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

5. If $f(g(x)) = g(f(x)) = x$ for all real numbers x, and $f(2) = 5$ and $f(5) = 3$, then the value of $g(3) + g(f(2))$ is

(A) 7 (B) 5 (C) 3 (D) 2

8. Let ' f ' be a function defined in $[-2,3]$ given as $f(x) = \begin{cases} -(x-1), & 0 \le x < 1 \\ 2(x-1)^2, & 1 \le x < 2 \\ -x^2 + 4x - 3, & 2 \le x \le 3 \end{cases}$

List-I	List-II
(P) The number of integers in the range of f(x) is	(1) 2
(Q) The number of integral values of x which are in the domain of $f(1 - \lvert x\rvert)$, is	(2) 4
(R) The number of integers in the range of $\lvert f(-\lvert x\rvert)\rvert$, is	(3) 6
(S) The number of integral values of k for which the equation $f(\lvert x\rvert) = k$ has exactly four distinct solutions is	(4) 7

Code :

(A) P-3, Q-3, R-2, S-1
(B) P-4, Q-4, R-2, S-1
(C) P-3, Q-4, R-2, S-1
(D) P-3, Q-4, R-2, S-2

38. Let R_1 and R_2 be relations on the set {1, 2.....50} such that
$R_1 = \{(p, p^n) : p \text{ is a prime and } n \ge 0 \text{ is an integer}\}$ and
$R_2 = \{(p, p^n) : p \text{ is a prime and } n = 0 \text{ or } 1\}$.
Then, the number of elements in $R_1 - R_2$ is _____. **[JEE - Main 2022]**

27. Let $f, g : N \to N$ such that $f(n + 1) = f(n) + f(1)\ \forall\ n \in N$ and g be any arbitrary function. Which of the following statements is NOT true ? **[JEE - Main 2021]**

(A) If fog is one one, then g is one one

(B) If f is onto, then $f(n) = n\ \forall\ n \in N$

(C) f is one-one

(D) If g is onto, then fog is one-one