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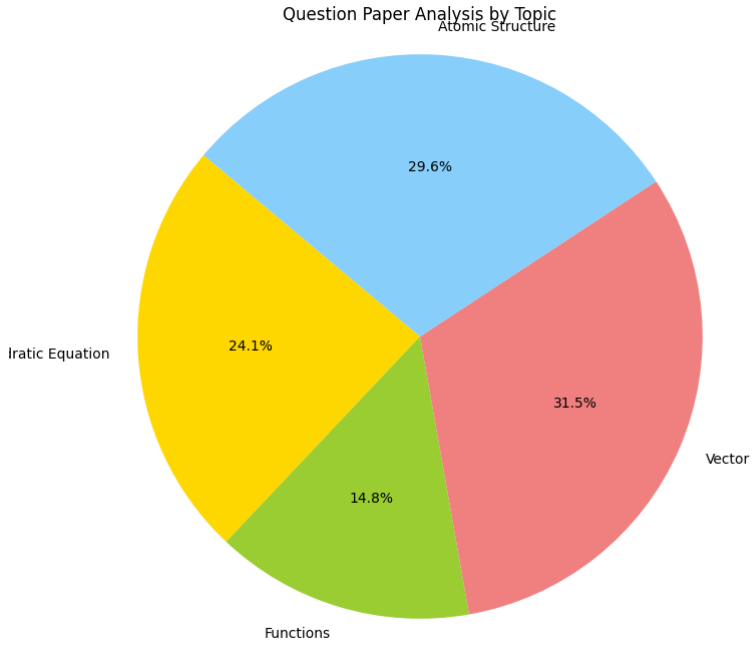
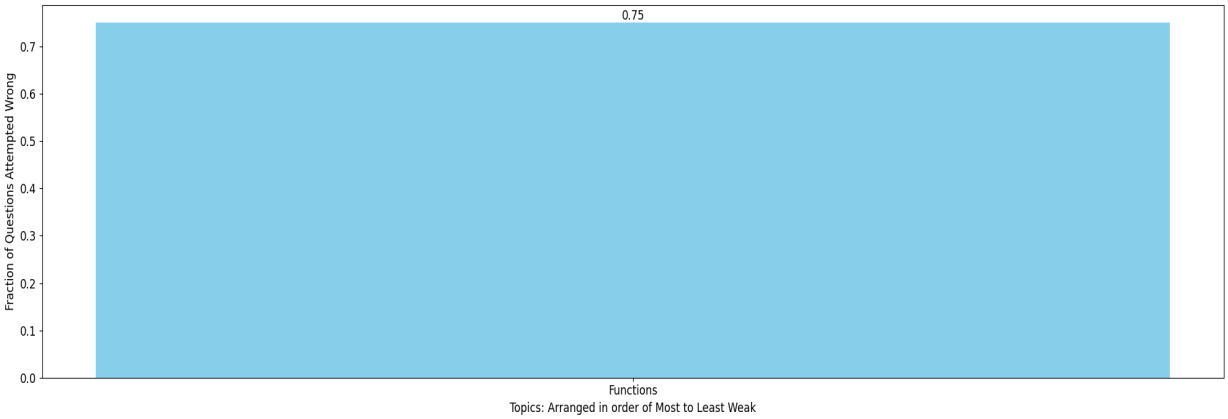
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

3. If $f(x) = \sqrt[3]{\frac{2}{\log_2(3-2x)}} - 1$ then the value of 'a' which satisfies $f^{-1}(2a-4) = \frac{1}{2}$, is

(A) 4 (B) 3 (C) 2 (D) 1

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

36. For $p, q \in R$, consider the real valued function $f(x) = (x - p)^2 - q$, $x \in R$ and $q > 0$. Let a_1, a_2, a_3 and a_4 be in an arithmetic progression with mean p and positive common difference. If $|f(a_i)| = 500$ for all I = 1, 2, 3, 4, then the absolute difference between the roots of $f(x) = 0$ is: **[JEE - Main 2022]**

12. Let $f(x) = ([a]^2 - 5[a] + 4)x^3 - (6\{a\}2 - 5\{a\} + 1)x - \text{sgn } x.(\tan x)$ be an even function for $\forall x \in R$. If S be the sum of all possible values of 'a' then [S] is (Here [.] & {} represent greatest integer & fractional part functions respectively.)

10. The number of elements in the range of $f(x) = [x] + [2x] + \left[\frac{2}{3}x\right] + [3x] + [4x] + [5x]$ for $0 \le x < 3$ is