Dishika Singh Total
MLAssist - Personalised DPP

Question Paper Analysis:

Question Paper Analysis by Topic

Atomic Structure

29.6%

Vector

31.5%

14.8%

Functions

24.1%

Iratic Equation

Weak Topic Analysis:

0.62

Functions

Topics: Arranged in order of Most to Least Weak

Fraction of Questions Attempted Wrong
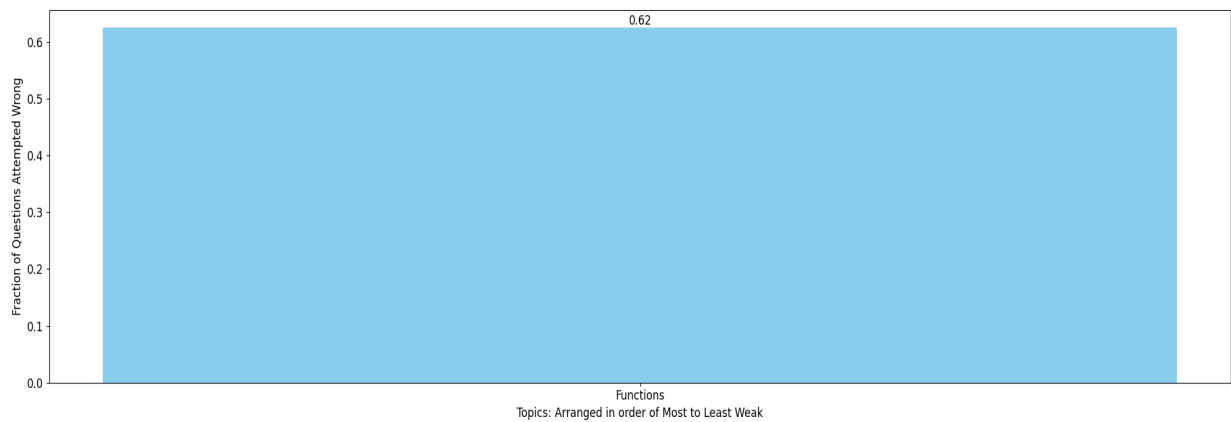
Practice Questions:

Functions:

9. Let $f: I \to I$, defined as $f(x) = 2\sin(2\pi x) - 10\tan(5\pi x) + 7\cos(4\pi x) + 3$, then which of the following statement(s) is/are TRUE?

(A) $f(x)$ is periodic function.
(B) $f(x)$ is an even function.
(C) $f(x)$ is an odd function and its inverse exists.
(D) $f(f(f(x))) = f(f(x))$ for all $x \in I$.

[Note : I denote the set of all integers.]

INTEGER TYPE

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

5^x

13. Compute the inverse of the functions:

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

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

(c) $y = \dfrac{10^x - 10^{-x}}{10^x + 10^{-x}}$

13. Let $\sum_{k=1}^{10} f(a + k) = 16(2^{10} - 1)$, where the function f satisfies $f(x + y) = f(x)f(y)$ for all natural numbers x, y and $f(1) = 2$. Then, the natural number 'a' is [JEE - Main 2019]

(A) 2   (B) 4   (C) 3   (D) 16

$(1-x)$ $(2x)$

8. Let $g: R \rightarrow R$ defined by $g(x) = \{e^x\}$, where $\{x\}$ denotes fractional part function.

   Statement-1 : $g(x)$ is periodic function.

   Statement-2 : $\{x\}$ is periodic function.

   (A) Statement-1 is true, statement-2 is true and statement-2 is correct explanation for statement-1.

   (B) Statement-1 is true, statement-2 is true and statement2 is NOT the correct explanation for statement-1.

   (C) Statement-1 is true, statement-2 is false.

   (D) Statement-1 is false, statement-2 is true

   MULTIPLE CORRECTTYPE