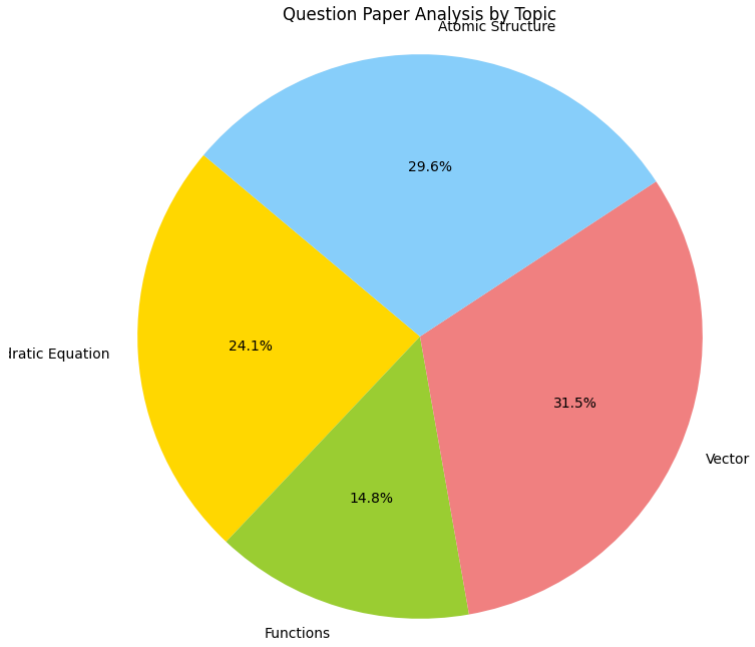
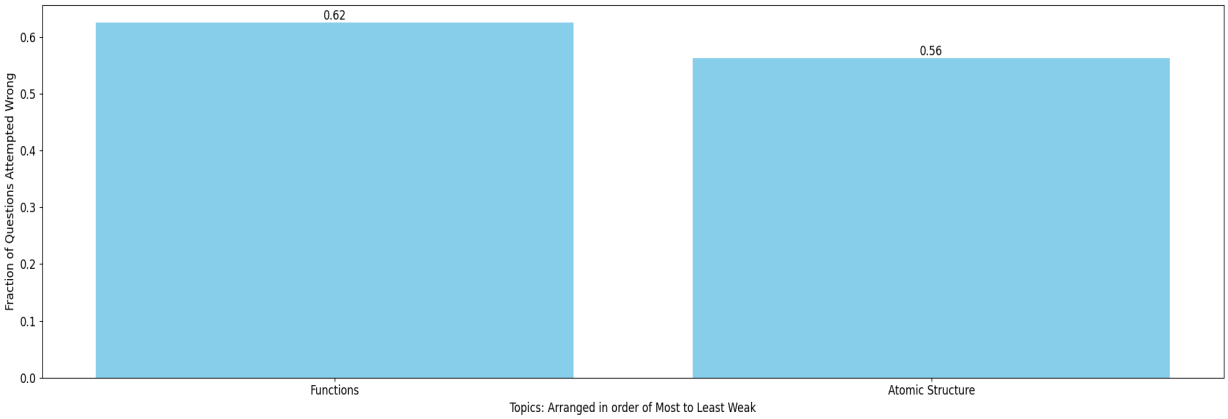
Yashwanth Total
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

3. The area bounded by the graph of f(x) and the x-axis from $x = -1$ to $x = 9$ is

(A) $\frac{31}{2}$ (B) 15 (C) 12 (D) $\frac{15}{2}$

11. For $x \in \left(0, \frac{3}{2}\right)$, let $f(x) = \sqrt{x}$, $g(x) = \tan x$ and $h(x) = \frac{1-x}{1+x^2}$ If $\phi(x) = (hof) \circ g)(x)$, then $\phi\left(\frac{\pi}{3}\right)$ is equal to **[JEE - Main 2019]**

(A) $\tan \frac{\pi}{12}$ (B) $\tan \frac{11\pi}{12}$ (C) $\tan \frac{7\pi}{12}$ (D) $\tan \frac{5\pi}{12}$

23. Let $f : (1, 3) \to R$ be a function defined by $f(x) = \frac{x[x]}{1+x^2}$ where [x] denotes the greatest integer $\leq x$. Then the range of f is: **[JEE - Main 2020]**

(A) $\left(\frac{2}{5}, \frac{1}{2}\right) \cup \left(\frac{3}{5}, \frac{4}{5}\right]$ (B) $\left(\frac{2}{5}, \frac{4}{5}\right]$ (C) $\left(\frac{3}{5}, \frac{4}{5}\right)$ (D) $\left(\frac{2}{5}, \frac{3}{5}\right] \cup \left(\frac{3}{4}, \frac{4}{5}\right)$

3. Number of integral values of x in the domain of function $f(x) = \sqrt{\ln |\ln |x||} + \sqrt{7|x| - |x|^2 - 10]}$ is equal to

(A) 4 (B) 5 (C) 6 (D) 7

3. If $f: R \to R$ is a function defined by $f(x) = [x] \cos \pi \left(\frac{2x-1}{2}\right)$, where [x] denotes the greatest integer function, then f is : **[AIEEE 2012]**

(A) continuous only at $x = 0$.

(B) continuous for every real x.

(C) discontinuous only at $x = 0$.

(D) discontinuous only at non-zero integral values of x.

47.2 eV to excite electron from second Bohr orbit to third Bohr orbit, find the value of Z :

(A) 1 (B) 3 (C) 5 (D) 4

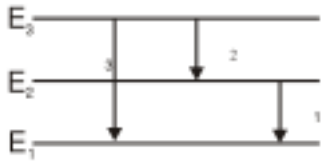
24. In the following transition which statement is correct?

(A) $E_{3-1} = E_{3-2} - E_{2-1}$

(B) $\lambda_3 = \lambda_1 + \lambda_2$

(C) $\nu_3 = \nu_2 + \nu_1$

(D) All of these



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33. For emission line of atomic hydrogen from $n_i = 8$ to $n_f =$ the plot of wave number $\left(\bar{\nu}\right)$ against $\left(\frac{1}{n^2}\right)$ will be (The Rydberg constant, R_H is in wave number unit).

[JEE Main (Jan.) 2019]

(1) Linear- with slope - R_H (2) Linear with intercept - R_H

(3) Non linear (4) Linear with slope R_H

42. If p is the momentum of the fastest electron ejected from a metal surface after the irradiation of light having wavelength λ, then for 1.5 p momentum of the photoelectron, the wavelength of the light should be : (Assume kinetic energy of ejected photoelectron to be very high in comparison to work function) : **[JEE Main (April) 2019]**

(1) $\frac{3}{4}\lambda$ (2) $\frac{4}{9}\lambda$ (3) $\frac{1}{2}\lambda$ (4) $\frac{2}{3}\lambda$

29. The ratio of difference in wavelengths of 1st and 2nd lines of Lyman series in H–like atom to difference in wavelength for 2nd and 3rd lines of same series is:

(A) 2.5 : 1 (B) 3.5 : 1 (C) 4.5 : 1 (D) 5.5 : 1