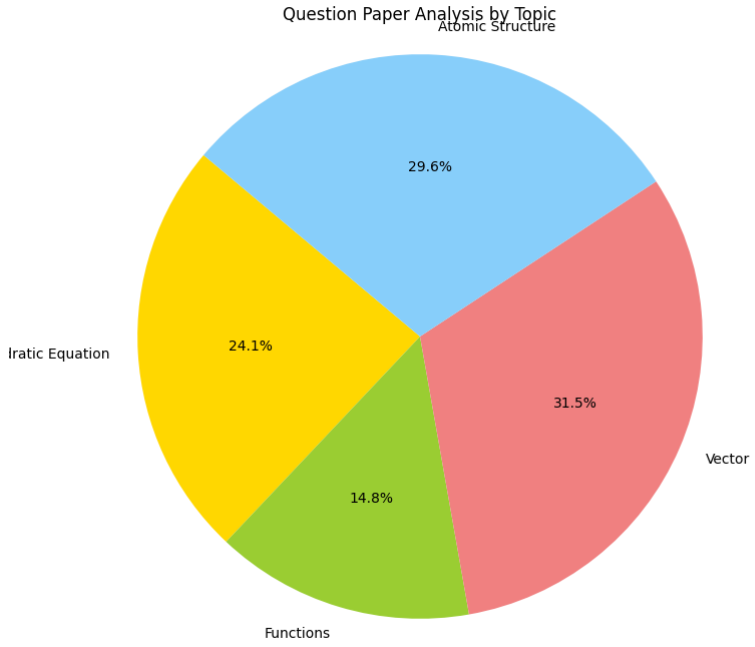
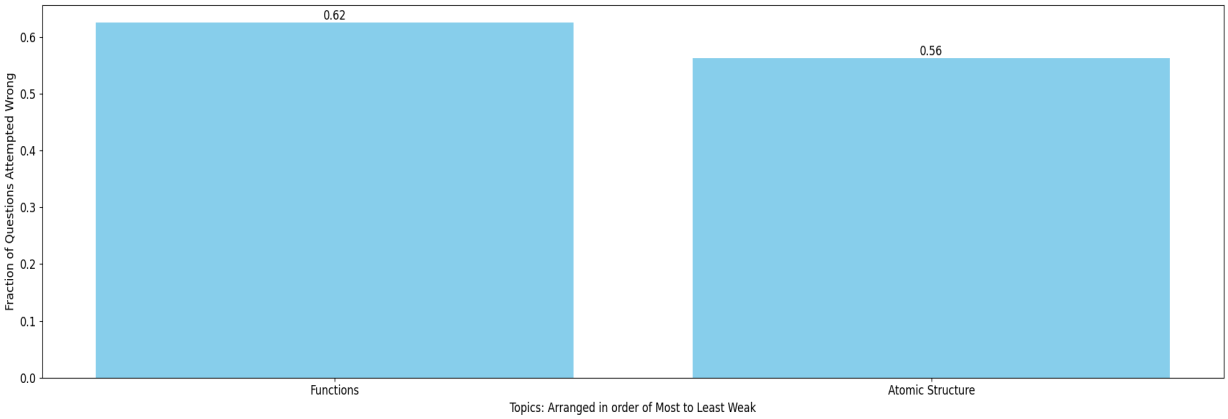
Kushagra Mohan Gangwar Total
MLAssist - Personalised DPP

Question Paper Analysis:



Weak Topic Analysis:



Practice Questions:

Functions:

8. Let $f(x) = x^2 + \frac{1}{x^2}$ and $g(x) = x - \frac{1}{x}, x \in R - \{-1,0,1\}$.

If $h(x) = \frac{f(x)}{g(x)}$, then the local minimum value of $h(x)$ is **[JEE - Main 2018]**

(A) -3 (B) $-2\sqrt{2}$ (C) $2\sqrt{2}$ (D) 3

8. Let $f(x) = \ln x$ and $g(x) = x^2 - 1$

Column-I contains composite functions and column-II contains their domain. Match the entries of column-I with their corresponding answer is column-II.

Column-I	**Column-II**
(A) fog	(P) $(1, \infty)$
(B) gof	(Q) $(-\infty, \infty)$
(C) fof	(R) $(-\infty, -1) \cup (1, \infty)$
(D) gog	(S) $(0, \infty)$

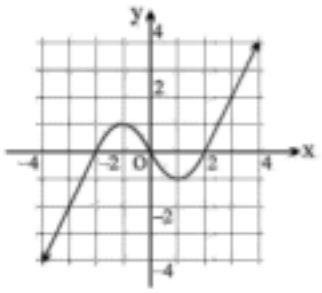
INTEGER TYPE

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

1. The graph of the function $y = g(x)$ is shown.

The number of solutions of the equation $||g(x)| - 1| = \frac{1}{2}$, is



(A) 4 (B) 5 (C) 6 (D) 8

7. If minimum and maximum values of $f(x) = 2|x - 1| + |x + 3| - 3|x - 4|$ are m and M respectively then $(m + M)$ equals

(A) 0 (B) 1 (C) 2 (D) 3

Atomic Structure:

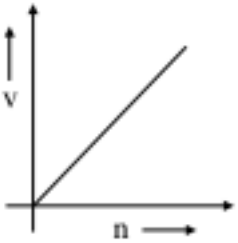
11. Select the correct curve(s):

If v = velocity of electron in Bohr's orbit

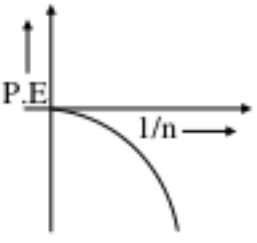
r = Radius of electron in Bohr's orbit

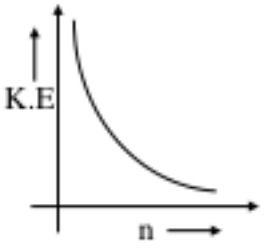
P.E. = Potential energy of electron in Bohr's orbit

K.E. = Kinetic energy of electron in Bohr's orbit

(A)


(B)


(C)


(D)


16. The energy of H–atom in n^{th} orbit is E_n then energy in n^{th} orbit of singly ionized helium atom will be:

(A) $4E_n$ (B) $E_n/4$ (C) $2E_n$ (D) $E_n/2$

30. The ratio of wave length of photon corresponding to the α-line of Lyman series in H-atom and β-line of Balmer series in He^+ is

(A) 1 : 1 (B) 1 : 2 (C) 1 : 4 (D) 3 : 16

3. A sodium street light gives off yellow light that has a wavelength of 600 nm. Then

(For energy of a photon take $E = \frac{12400\ eV\,\text{Å}}{\lambda\,(\text{Å})}$)

(A) frequency of this light is $7\times 10^{14}\ s^{-1}$ (B) frequency of this light is $5\times 10^{14}\ s^{-1}$

(C) wave number of the light is $3 \times 10^{6}\ m^{-1}$ (D) energy of the photon is approximately 2.07 eV

39. A light source of wavelength λ illuminates a metal and ejects photo-electrons with $(K.E.)_{max} = 1$ eV Another light source of wavelength $\frac{\lambda}{3}$, ejects photo-electrons from same metal with $(K.E.)_{max} = 4$eV. Find the value of work function ?

(A) 1 eV (B) 2 eV (C) 0.5 eV (D) None of these