

JEE MAIN STRUCTURE OF ATOM — QUANTUM MECHANICAL MODEL OF ATOM AND QUANTUM NUMBERS — PYQS

Max. Marks: 16
Questions: 4

Section A (MCQ) — 4 questions

Q.1 Identify the correct statements from the following :
Choose the correct answer from the options given below:

- A. Heisenberg uncertainty principle is applicable to electrons.
- B. The size of $2p_x$ orbital is less than the size of $3p_x$ orbital.
- C. The energy of $2s$ orbital of H atom is equal to the energy of $2s$ orbital of Li.
- D. The electronic configuration of Cr is $[\text{Ar}] 3d^5 4s^1$

[JEE Main 2026 (Online) 5th April Morning Shift]

- (1) A, B and C Only (2) A, B and D Only
(3) B, C and D Only (4) A, C and D Only

Scan or tap for the full solution



Q.2 Given,
(A) $n = 5, m_l = -1$

(B) $n = 3, l = 2, m_l = -1, m_s = +\frac{1}{2}$

The maximum number of electron(s) in an atom that can have the quantum numbers as given in (A) and (B) respectively are :

[JEE Main 2026 (Online) 23rd January Morning Shift]

- (1) 4 and 1 (2) 2 and 4 (3) 26 and 1 (4) 8 and 1

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Q.3 Correct statements for an element with atomic number 9 are:

- A. There can be 5 electrons for which $m_s = +\frac{1}{2}$ and 4 electrons for which $m_s = -\frac{1}{2}$.
- B. There is only one electron in p_z orbital.
- C. The last electron goes to orbital with $n = 2$ and $l = 1$.
- D. The sum of angular nodes of all the atomic orbitals is 1.

Choose the correct answer from the options given below: [JEE Main 2025 (Online) 8th April Evening Shift]

- (1) A and B Only (2) A, C and D Only
(3) A and C Only (4) C and D Only

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Q.4 For electrons in ' $2s$ ' and ' $2p$ ' orbitals, the orbital angular momentum values, respectively are:

[JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) 0 and $\sqrt{6} \frac{h}{2\pi}$ (2) 0 and $\sqrt{2} \frac{h}{2\pi}$
(3) $\sqrt{2} \frac{h}{2\pi}$ and 0 (4) $\frac{h}{2\pi}$ and $\sqrt{2} \frac{h}{2\pi}$

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ANSWER KEY

Ques.	1	2	3	4						
Ans.	2	4	3	2						