

PART 1 - CHEMISTRY

Topic : Structure of atom

SECTION-1 : (Maximum Marks : 3)

- This section contains **ONE** question.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is the correct answer.
- For each question, choose the option corresponding to the correct answer.
- Answer to each question will be evaluated according to the following marking scheme :
Full Marks : +3 If **ONLY** the correct option is chosen;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -1 In all other cases.

1. According to Bohr's model, the highest kinetic energy is associated with the electron in the

[JEE Advanced 2024 Paper 2]

(A) first orbit of H atom (B) first orbit of He^+ (C) second orbit of He^+ (D) second orbit of Li^{2+}

Scan or tap for the
full solution



Space for Rough Work

SECTION-2 : (Maximum Marks : 8)

- This section contains **TWO** questions.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONE OR MORE THAN ONE** of these four option(s) is(are) correct answer(s).
- For each question, choose the option(s) corresponding to (all) the correct answer(s).
- Answer to each question will be evaluated according to the following marking scheme :
Full Marks : +4 ONLY if (all) the correct option(s) is(are) chosen;
Partial Marks : +3 If all the four options are correct but ONLY three options are chosen;
Partial Marks : +2 If three or more options are correct but ONLY two options are chosen, both of which are correct;
Partial Marks : +1 If two or more options are correct but ONLY one option is chosen and it is a correct option;
Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);
Negative Marks : -2 In all other cases.
- For example, in a question, if **(A), (B) and (D)** are the ONLY three options corresponding to correct answers, then choosing ONLY (A), (B) and (D) will get +4 marks; choosing ONLY (A) and (B) will get +2 marks; choosing ONLY (A) and (D) will get +2 marks; choosing ONLY (B) and (D) will get +2 marks; choosing ONLY (A) will get +1 mark; choosing ONLY (B) will get +1 mark; choosing ONLY (D) will get +1 mark; choosing no option (i.e. the question is unanswered) will get 0 marks; and choosing any other combination of options will get -2 marks.

2. The 2s and the 2p orbital energies of hydrogen atom are $E_{2s}(\text{H})$ and $E_{2p}(\text{H})$, respectively. The 2s and the 2p orbital energies of lithium atom are $E_{2s}(\text{Li})$ and $E_{2p}(\text{Li})$, respectively. The correct option(s) about the orbital energies is(are) [JEE Advanced 2026 Paper 1]

(A) $E_{2s}(\text{Li}) < E_{2p}(\text{Li})$ (B) $E_{2s}(\text{H}) = E_{2p}(\text{H})$ (C) $E_{2p}(\text{H}) < E_{2s}(\text{Li})$ (D) $E_{2s}(\text{H}) > E_{2s}(\text{Li})$

Scan or tap for the
full solution



3. Among the following, the correct statement(s) for electrons in an atom is(are) [JEE Advanced 2024 Paper 1]
- (A) Uncertainty principle rules out the existence of definite paths for electrons.
 - (B) The energy of an electron in 2s orbital of an atom is lower than the energy of an electron that is infinitely far away from the nucleus.
 - (C) According to Bohr's model, the most negative energy value for an electron is given by $n = 1$, which corresponds to the most stable orbit.
 - (D) According to Bohr's model, the magnitude of velocity of electrons increases with increase in values of n .

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full solution



Space for Rough Work

SECTION-3 : (Maximum Marks : 4)

- This section contains **ONE** question.
- The answer to each question is a **NON-NEGATIVE INTEGER**.
- For each question, enter the correct integer corresponding to the answer in the place designated to enter the answer.
- Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 If ONLY the correct answer is entered;

Zero Marks : 0 In all other cases.

4. X^{a+} and Y^{b+} are hydrogen-like species. The wavelength of light absorbed during the transition between the states with principal quantum numbers $n = 1$ and $n = 2$ of X^{a+} is λ . The wavelength of light absorbed during the transition between the states with principal quantum numbers $n = 2$ and $n = 4$ of Y^{b+} is 9λ . The lowest possible value of $(a + b)$ is ____.

[JEE Advanced 2026 Paper 2]

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Space for Rough Work

JEE ADVANCED STRUCTURE OF ATOM — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-1																									
Ques.	1																								
Ans.	B																								

SECTION-2																									
Ques.	2	3																							
Ans.	A, B, D	A, B, C																							

SECTION-3																									
Ques.	4																								
Ans.	3																								