

PART 1 - CHEMISTRY

Topic : Chemical bonding and molecular structure

SECTION-1 : (Maximum Marks : 6)

- This section contains **TWO** questions.
- 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. The correct order of dipole moments for the given species is [JEE Advanced 2026 Paper 1]

- (A) $\text{BF}_3 = \text{NH}_4^+ < \text{NF}_3 < \text{NH}_3$ (B) $\text{BF}_3 < \text{NH}_4^+ < \text{NF}_3 < \text{NH}_3$
(C) $\text{NH}_4^+ < \text{BF}_3 < \text{NH}_3 < \text{NF}_3$ (D) $\text{BF}_3 < \text{NH}_4^+ < \text{NH}_3 < \text{NF}_3$

Scan or tap for the
full solution

2. The correct order of ONO bond angle in the given species is [JEE Advanced 2026 Paper 2]

- (A) $\text{NO}_2^+ < \text{NO}_2 < \text{NO}_3^- < \text{NO}_2^-$ (B) $\text{NO}_2^- < \text{NO}_3^- < \text{NO}_2 < \text{NO}_2^+$
(C) $\text{NO}_3^- < \text{NO}_2^- < \text{NO}_2 < \text{NO}_2^+$ (D) $\text{NO}_2^- < \text{NO}_3^- < \text{NO}_2^+ < \text{NO}_2$

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.

3. Regarding the molecular orbital (MO) energy levels for homonuclear diatomic molecules, the INCORRECT statement(s) is(are) [JEE Advanced 2025 Paper 1]

- (A) Bond order of Ne_2 is zero.
(B) The highest occupied molecular orbital (HOMO) of F_2 is σ -type.
(C) Bond energy of O_2^+ is smaller than the bond energy of O_2 .
(D) Bond length of Li_2 is larger than the bond length of B_2 .

Scan or tap for the full solution



4. The option(s) in which at least three molecules follow Octet Rule is(are) [JEE Advanced 2024 Paper 1]

- (A) CO_2 , C_2H_4 , NO and HCl (B) NO_2 , O_3 , HCl and H_2SO_4
(C) BCl_3 , NO , NO_2 and H_2SO_4 (D) CO_2 , BCl_3 , O_3 and C_2H_4

Scan or tap for the full solution

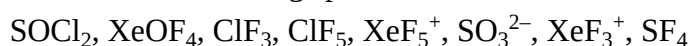


Space for Rough Work

SECTION-3 : (Maximum Marks : 4)

- This section contains **ONE** question.
- Each question has **TWO** lists: **List-I** and **List-II**.
- Four options are given representing matching of elements from List-I and List-II. **ONLY ONE** of these four options corresponds to a correct matching.
- 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 : +4 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.

5. Consider the following species:



List-I contains different molecular shapes and **List-II** contains total number of species with the same molecular shapes from the given species. Match each entry in **List-I** with the appropriate entry in **List-II** and choose the correct option.

[JEE Advanced 2026 Paper 1]

List-I		List-II	
P.	See-saw	1.	one
Q.	T-Shaped	2.	two
R.	Trigonal Planar	3.	three
S.	Square Pyramidal	4.	four
		5.	zero

(A) $P \rightarrow 1; Q \rightarrow 2; R \rightarrow 5; S \rightarrow 3$

(B) $P \rightarrow 5; Q \rightarrow 4; R \rightarrow 2; S \rightarrow 3$

(C) $P \rightarrow 3; Q \rightarrow 2; R \rightarrow 1; S \rightarrow 4$

(D) $P \rightarrow 1; Q \rightarrow 3; R \rightarrow 5; S \rightarrow 4$

Scan or tap for the full solution



Space for Rough Work

JEE ADVANCED CHEMICAL BONDING AND MOLECULAR STRUCTURE — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-1

[illegible]

SECTION-2

[illegible]

SECTION-3

[illegible]