

**Navodaya Vidyalaya Samiti**  
**Answer Key**  
**Term – 1 Examination 2025-26**  
**Subject – Chemistry**  
**Class XI**

Question Number	Answer	Maximum Marks
<b>SECTION A</b>		
1	B	1
2	C	1
3	B	1
4	C	1
5	D	1
6	D	1
7	C	1
8	B	1
9	B	1
10	B	1
11	C	1
12	B	1
13	C	1
14	A	1
15	C	1
16	C	1
<b>SECTION B</b>		
17	In O <sub>2</sub> - head-on overlap and lateral overlap OR In Cl <sub>2</sub> molecule – Head on overlap.	2
18	Al, Group number 13 / IIIA.	2
19	Gamma rays	2
20	Zn, due to having all electrons in pairs.	2
21	Answer based on formation and strength. Any two.	2
<b>SECTION C</b>		
22	Correct formula, correct data input Answers 0.645 m.	1+1+1
23	H <sub>2</sub> is limiting reagent, proper explanation and calculation.	1+1+1
24	A. Explanation based on VSEPR theory. B. Bond lengths are not same. C. Bond order for N <sub>2</sub> is higher than O <sub>2</sub> molecule.	1+1+1
25	A. Proper explanation. B. Mg, proper explanation. C. Na Al Mg	1+1+1
26	(A) BF <sub>3</sub> : SP <sup>2</sup> and Trigonal planer shaped (B) SF <sub>6</sub> : SP <sup>3</sup> d <sup>2</sup> and Octahedral shaped (C) ClF <sub>3</sub> : SP <sup>3</sup> d and T shaped	1+1+1

	(D) XeO <sub>4</sub> : SP <sup>3</sup> and tetrahedral shaped	
27	<p>A. The Gibbs-Helmholtz equation relates the change in Gibbs free energy (<math>\Delta G</math>) of a system to changes in enthalpy (<math>\Delta H</math>) and temperature.</p> <p>B. Answer is (A) , Randomness decrease .</p>	2+1
28	The uncertainty in the electron's position is at least ~1.93 cm, which is quite large, showing the fundamental limit in precision for small particles like electrons!	3
<b>SECTION D</b>		
29	<p>1. Answer based on electronic configuration.  2. full electronic configuration of C  3. Element A</p> <p style="text-align: center;">OR</p> <p>3.10 electrons</p>	2+1+1
30	<p>1. Proper explanation.  2. Bond lengths measurement and thermodynamics stability.  3. Proper definition and explanation.</p> <p style="text-align: center;">OR</p> <p>3.Any two.</p>	<p>1  2  <math>\frac{1}{2}+1/2</math></p> <p style="text-align: center;">OR</p> <p><math>\frac{1}{2}+1/2</math></p>
<b>SECTION E</b>		
31 A.	<p>1. Energy: -3.4 eV. Velocity: 1.090000000m/s.  2. Energy difference: 48.36 eV  3. Velocity: 1.635000000m/sec.</p> <p style="text-align: center;">OR</p>	2+2+1
31 B.	<p>1. Sigma bond: 3 and pi bond: 2.  2. Explanation based on VSEPR theory.  3. Hybridization: SP, proper explanation.</p>	
32 A.	<p>1. CH<sub>2</sub>O. (complete calculation)  2. Proper explanation.  3. Any two valid differences. Like, Molarity measures the number of moles of solute per litre of solution, but Normality Measures the number of gram equivalents of solute per litre of solution.</p> <p style="text-align: center;">OR</p>	<p>2  1  1+1</p>
32 B	<p>1. In reality, all C–O bonds are equivalent in length. This is because the electron density is delocalized across all three oxygen atoms due to resonance.  2. CO<sub>2</sub> Molecule is linear, two polar bonds are oriented in opposite direction.  3. Cis butene has a higher dipole moment, the polarities of the bonds add up due to the same side</p>	<p>1+1  1  1+1</p>

33 A.	<ol style="list-style-type: none"> <li>1. Size increases on moving from top to bottom in a group, and size decreases moving from left to right.</li> <li>2. Due to having stable electronic configuration.</li> <li>3. In +2 oxidation state, have a stable electronic configuration.</li> <li>4. Correct electronic configuration</li> </ol> <p style="text-align: center;">OR</p>	1+1  1 1 1
33 B.	<ol style="list-style-type: none"> <li>1. Proper explanation according to periodic law.</li> <li>2. Large size due to greater shielding effect.</li> <li>3. In -1 oxidation state, having a stable electronic configuration.</li> <li>4. Correct electronic configuration.</li> </ol>	1+1 1 1 1