Step Academy official

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STUDENT NAME	
PAPER CODE	34246
TIME ALLOWED	40
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CLASS	New 1st Year (FSC/ICS)
SUBJECT	Chemistry
TOTAL MARKS	25
Paper Type	

Q1. Choose the correct answer. **5X1=5**

1. Sigma σ bonds are formed by:

(A) Head-on overlap **(B)** Sideways overlap **(C)** Lateral overlap **(D)** d-orbital overlap

2. In sp^3 hybridization, the bond angle is:

(A) 180^o **(B)** 120^o **(C)** 109.5^o **(D)** 90^o

3. The geometry of sp hybridized atoms is:

(A) Linear **(B)** Bent **(C)** Trigonal planar **(D)** Tetrahedral

4. A bond order of zero implies:

(A) Very strong bond **(B)** Stable molecule **(C)** Unstable or no bond **(D)** Ionic bonding

5. The antibonding orbital is represented as:

(A) π **(B)** σ **(C)** π^* **(D)** s

Q3. Write short answers of the following questions. **10X2=20**

1 . How does VBT explain the strength of a covalent bond?

2 . Describe bond formation in HCl.

3 . Why is the bond angle in CH_4 not 90^o?

4 . Predict the hybridization and shape of $A\ell C\ell_3$

5 . What does VSEPR theory predict about molecular shape?

6 . How do lone pairs affect molecular geometry?

7 . Describe the geometry of PCl_5 using VSEPR.

8 . Compare the bond order of O_2,O^-_2, and O^{2-}_2

9 . Explain the energy order of MO_S for B_2 and N_2.

10 . Write the molecular orbital configuration for C_2.