

Date

Experiment Title

Expt. No.

Chem 10 (Ref Exp 8)

LAB

Name

Group No.

Grade

46

KEY

Molecular Structure Worksheet

	<u>formula</u>	<u>val. e.</u>	<u>Lewis structure</u>	<u>ELECTRON GROUP SHAPE</u>	<u>MOLECULAR SHAPE</u>
A. <u>Single bonds</u>					
a)	H ₂	2	H : H	—	Linear
c)	Br ₂	14	:Br—Br:	—	linear
e)	HCl	8	H—Cl:	—	linear
g)	IBr	14	:I—Br:	—	linear
i)	CH ₄	8	$ \begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H} \end{array} $	tetra.	tetra.
k)	HOCl	14	$ \begin{array}{c} \text{H}-\ddot{\text{O}}-\ddot{\text{Cl}}: \\ \\ \text{H} \end{array} $	tetra.	bent
m)	NH ₃	8	$ \begin{array}{c} \text{H}-\ddot{\text{N}}-\text{H} \\ \\ \text{H} \end{array} $	tetra.	trig. pyramid
b)	NH ₂ OH	14	$ \begin{array}{c} \text{H}-\ddot{\text{N}}-\ddot{\text{O}}-\text{H} \\ \\ \text{H} \end{array} $	tetra. (N) tetra. (O)	trig. pyr. (N) bent (O)

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		MOLECULAR SHAPE			
Name KEY EXP 8 (CONT)				Group No.	Grade 47
B. Double bonds a) O_2 12 $:O=O:$ Electron Group Shape: — Molecular Shape: linear c) $HONO$ 18 $H-\ddot{O}-\ddot{N}=\ddot{O}:$ tetra. (O) trig. planar (N) bent (O) bent (N) e) C_2HCl_3 2(4) 1 3(7) 30 $\begin{array}{c} H \\ \diagdown \\ C=C \\ \diagup \\ Cl \\ \\ Cl \\ \\ Cl \end{array}$ trig. planar (C) trig. planar (C)					
C. Triple bonds a) N_2 10 $:N\equiv N:$ — linear b) C_2H_2 10 $H-C\equiv C-H$ linear (C) linear (C) c) $HOCN$ 16 $H-\ddot{O}-C\equiv N:$ tetra. (O) linear (C) bent (O) linear (C)					
D. Two double bonds a) CO_2 16 $:O=C=O:$ linear (C) linear (C) b) C_3H_4 16 $\begin{array}{c} H \\ \diagdown \\ C_1=C_2=C_3 \\ \diagup \\ H \end{array}$ trig. planar (C₁) linear (C₂) trig. plan. (C₁) linear (C₂) c) C_2H_2O 16 $\begin{array}{c} H \\ \\ H-C=C=O \\ \\ H \end{array}$ trig. plan. (C₁) linear (C₂) trig. plan. (C₁) linear (C₂)					
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