

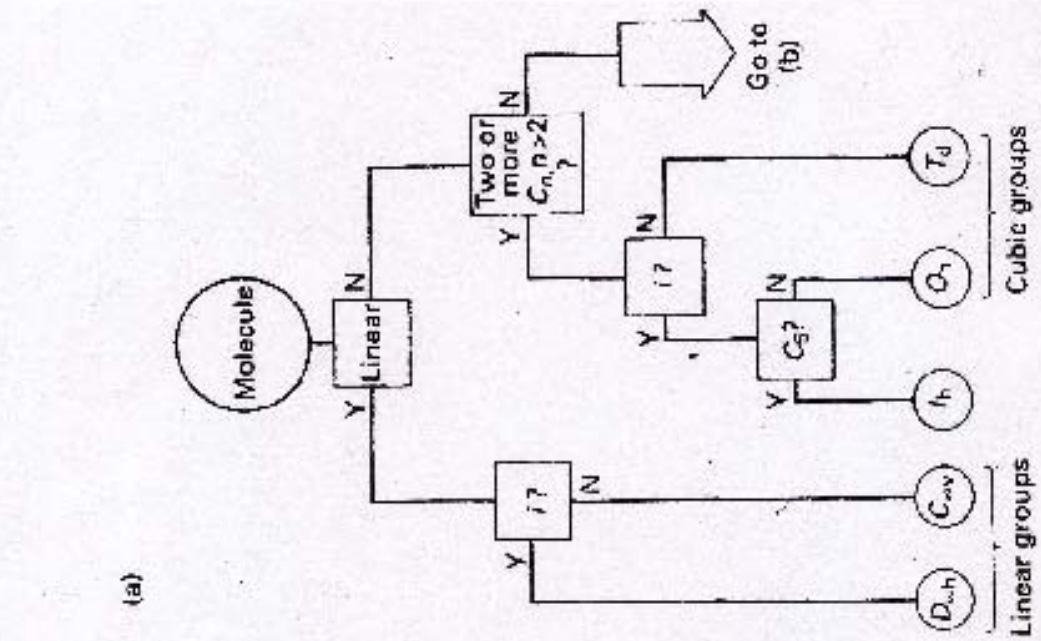
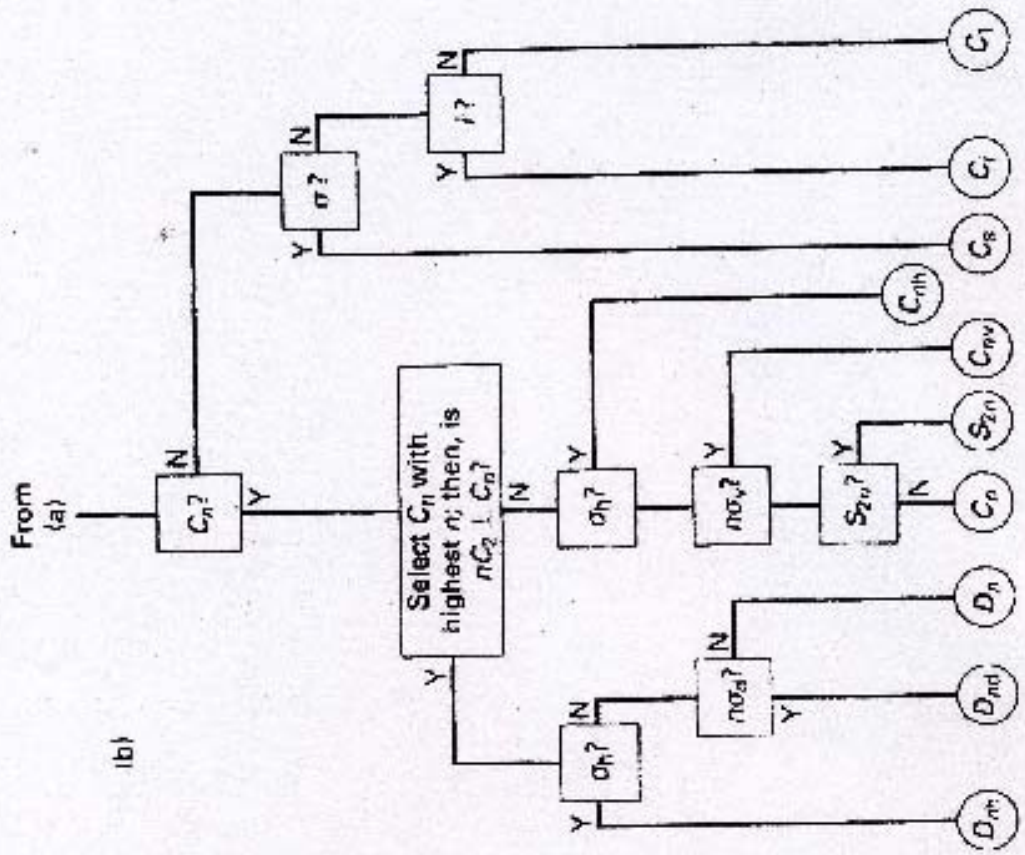
Anorganische Chemie 3 (ACIII), Übung 3

Bestimmen und nennen Sie unter Verwendung der beigefügten "Flowchart" und Beispiele die Punktgruppen der u.a. Moleküle nach Schönflies und Hermann/Mauguin (in Zweiergruppen).

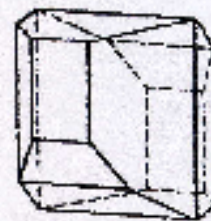
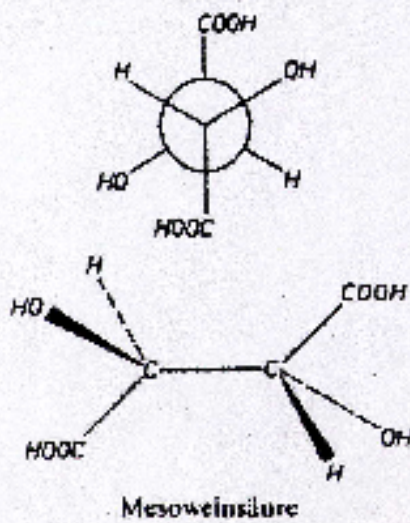
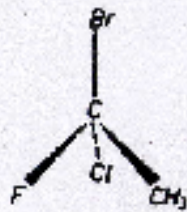
Namen, Vornamen:

Molekül	Schönflies	Hermann/Mauguin
1,1,1-Brom-Chlor-Fluorethan		
Mesoweinsäure		
Weinsäure		
trans-1,2-Dichlorethylen		
PtCl_4^{2-}		
JO_3^-		
Cyclohexan (Sesselform)		
$\text{B}(\text{OH})_3$		
Diphenylethin		
cis-1,2-Dichlorethylen		
Ethylen		
Tetrachlorcyclobutan		
Cuban		
Kohlenstoffdioxid		
Ferrocen		
S_8		
Hexaphenylbenzol		
Nitrat, Carbonat		
Benzol		
Methan		

Flowchart zur Punktgruppenbestimmung von Molekülen und Kristallen

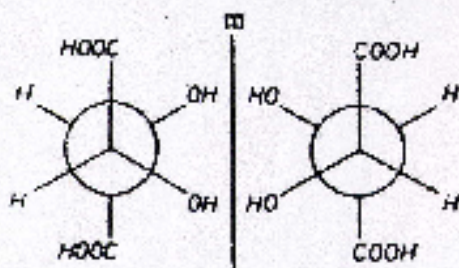


Bestimmen Sie die Punktgruppen der folgenden Moleküle bzw. Kristalle

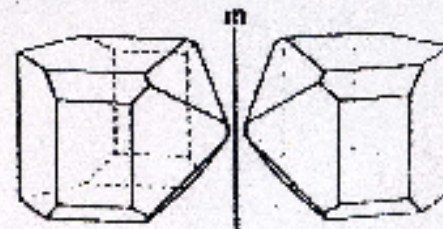


$\text{CH}_2(\text{COOH})_2$ (Malonsäure)

H_3BO_3 , $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
 MnSiO_3 (Rhodonit)
 $\text{NaAlSi}_3\text{O}_8$ (Albit)

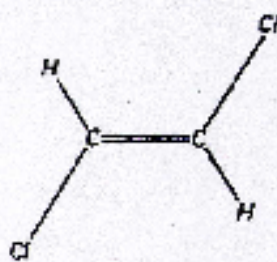


Die enantiomorphen Moleküle der Weinsäure



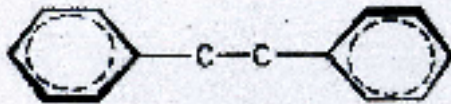
D- Weinsäure L-

$\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$
 $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ (Rohrzucker)
 $\text{C}_{14}\text{H}_{10}$ (Phenanthren)

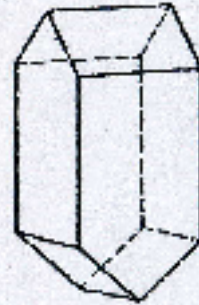


trans-1,2-Dichlorethylen

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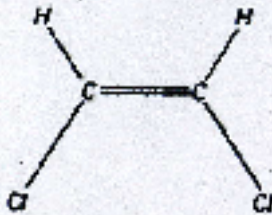


Diphenylethin

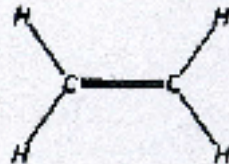


$MgSO_4 \cdot 7H_2O$ (Epsomit)

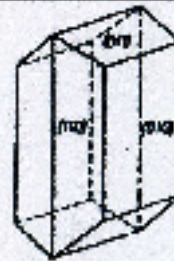
Vitamin B₁₂ (Abb. 1.1b)
 $KN_3C_4H_4O_6 \cdot 4H_2O$
 (Seignettesalz)



cis-1,2-Dichlorethylen

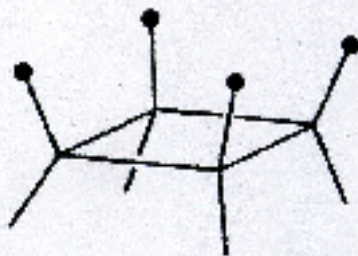


Ethylen



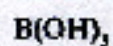
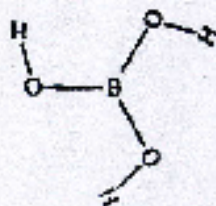
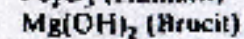
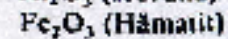
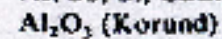
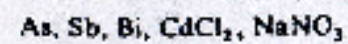
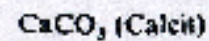
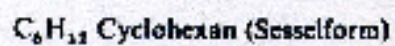
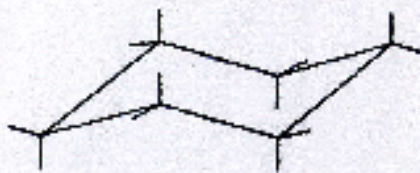
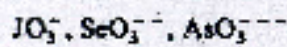
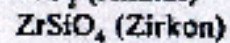
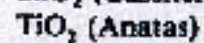
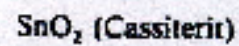
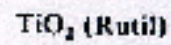
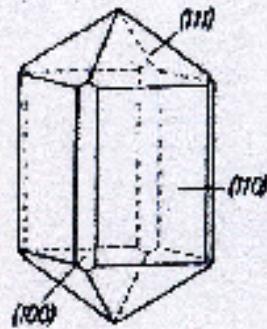
$CaCO_3$ (Aragonit)

$CaSO_4$ (Anhydrit), $KClO_4$
 $BaSO_4$ (Baryt), S
 $(COOH)_2$ (Oxalsäure), C_6H_6 , J_2

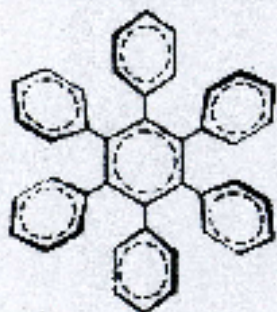


Tetrachlorocyclobutan

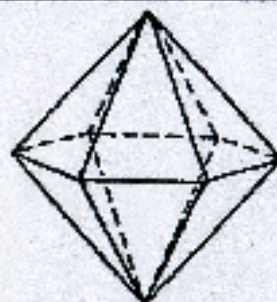
Bestimmen Sie die Punktgruppen der folgenden Moleküle bzw. Kristalle



Bestimmen Sie die Punktgruppen der folgenden Moleküle bzw. Kristalle



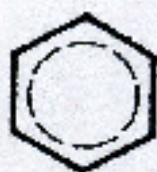
Hexaphenylbenzol



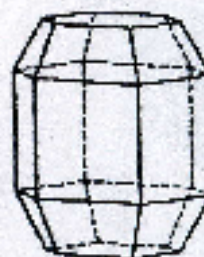
KAlSiO₄ (Kaliophilit)
SiO₂ (Hochquarz)



NO₃⁻, CO₃²⁻

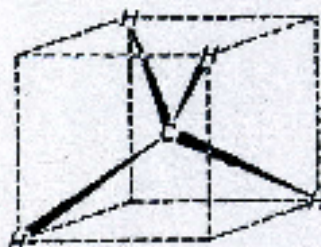


Benzol

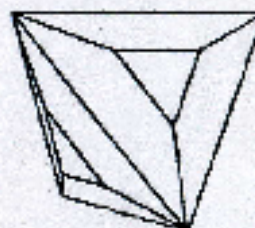


Mg

Be, Zn, CuS, NiAs,
Be₃Al₂Si₆O₁₈ (Beryll)
C (Graphit), MoS₂
C₂H₆



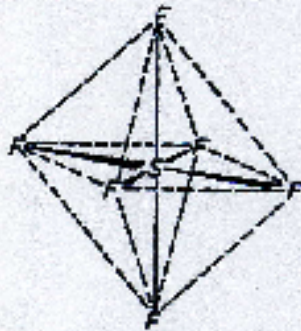
Methan



ZnS (Zinkblende)

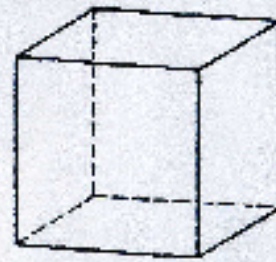
CuCl, CuBr, CuI
Al(PO₃)₃, Ag₃PO₄

Bestimmen Sie die Punktgruppen der folgenden Moleküle bzw. Kristalle



SF_6

C_2H_8 (Cuban)



$NaCl, KCl, CaF_2, MgO$

PbS (Abb. 4.1), $CsCl$

Granat (Abb. 1.1a)

$Cu, Ag, Au, Pt, Fe, W, Si$

C (Diamant)



H_2

O_2

Cl_2



CO_2

C_2H_2



Fe



Ferrocen
(verdeckte Konformation)



S_8