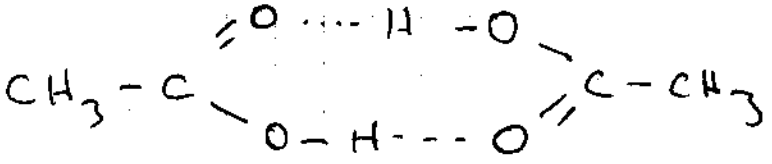
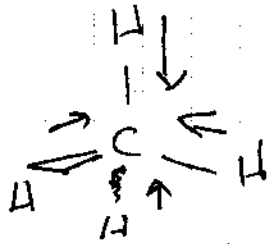
Chapter 10 – 30, 32, 34, 35, 37, 38, 42, 46, ~~48, 51~~

30.



32. If a molecule has polar bonds, the shape of the molecule is the deciding factor which determines if the bond dipoles cancel.

Examples are CO_2 $O=C=O$ ⟵ ⟶ cancel out

CH_4  all cancel out.

34. (a) $CHCl_3$ has a permanent dipole moment, contains dipole – dipole forces & London Forces.

(b) O_2 does not have a dipole moment, so only has London forces.

(c) polyethylene – only has London Dispersion Forces

(d) CH_3OH – Hydrogen Bonds / Dipole-Dipole / London Dispersion

35.

(a) Xe has no dipole-dipole interactions

(b) HF has the largest hydrogen bond forces.

(c) Xe has the largest dispersion forces.

37.

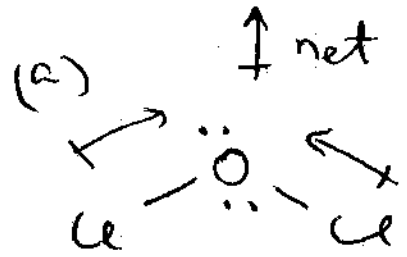
(a) C_8H_{18} has the larger dispersion forces because of its long hydrocarbon chain

(b) HI has the larger dispersion forces because of the larger, more polarizable iodine

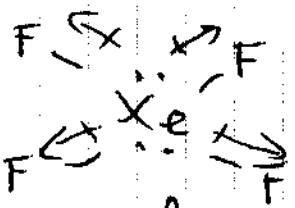
(c) H_2Se has the larger dispersion forces because of the more polarizable & less electronegative Se.

10.38-

(a)

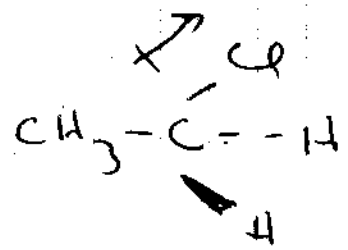


(b)

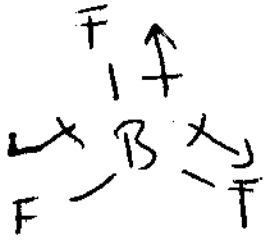


net dipole moment = 0

(c)



(d)



net dipole = 0

10.42.