33) a) Ar - LDF b) HCl - dipole-dipole

c) HF - H-bonding d) $CaCl_2$ - ionic

e) CH_4 - LDF f) CO - dipole-dipole

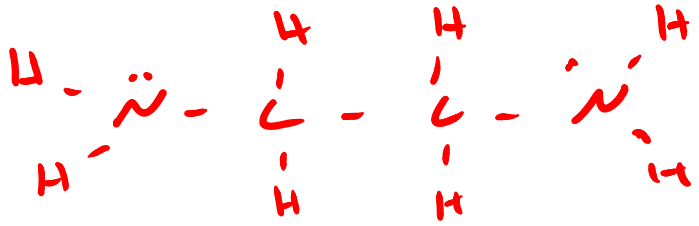
g) $NaNO_3$ - ionic

34) a) OCS polar molecule - dipole-dipole

CO_2 nonpolar molecule - LDF

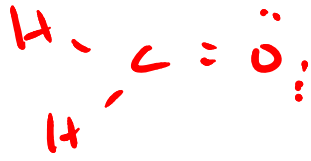
b)

both are polar so dipole-dipole but SeO_2 is larger, so more polarizable, stronger LDF

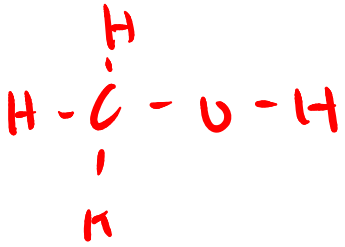
c) 

more extensive H-bonding

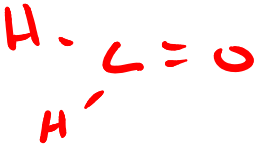
d) CH_3CH_3 nonpolar - LDF



polar - dipole-dipole

e) 

H bonding



dipole-dipole

37) a) neopentane is more compact than n-pentane, so less surface area for contact, so weaker LDF

b) HF H bonding.
HCl dipole - dipole

c) LiCl - ionic
HCl - dipole - dipole

d) n-Hexane is larger, stronger LDF

39) bp + fp directly related to strength of intermolecular forces

a) HBr polar, Kr and Cl_2 nonpolar

b) NaCl ionic, H_2O and HF H-bond

c) I_2 larger, more polarizable than Cl_2 + Br_2

d) N_2 - nonpolar and smallest LDF

e) CH_4 - smallest nonpolar molecule least LDF

f) HF - H bonding

41) - H_2O to glass stronger than H_2O - H_2O attraction

- Hg - Hg attraction stronger than Hg - glass attraction

42) H-Ö-Ö-H

greater H-bonding than water

stronger bond = ↑bp = ↓vp