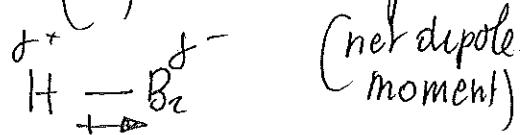


Polar molecules (page 15 topic 4)

- (a) HBr polar because - polar bond

 (net dipole moment) - asymmetrical shape / dipole moment not cancelled out.
- (b) N_2 non-polar because non polar bond
- (c) IF_3 polar (net dipole moment), polar bond not symmetrical shape
- (d) CCl_4 non-polar, polar bonds but symmetrical shape (tetrahedral)
- (e) CH_3Br polar, polar bonds but not symmetrical (dipole moment - net dipole moment towards bromine)
- (f) SO_2 polar, polar bond + not symmetrical shape (bent) (net dipole moment towards 'O')
- (g) SF_6 non-polar, polar bonds, symmetrical shape
- (h) NH_4^+ non-polar, " , "
- (i) NO_2^- same as SO_2 (f) (j) CH_3Cl_2 - same as (e)
- (k) HOCN $\text{H}-\ddot{\text{O}}-\text{C}\equiv\text{N}:$ polar
- (l) BeF_2 non-polar, polar bond, symmetrical shape (linear)
- (m) KrF_4 non-polar " ; " (square planar)
- (n) CF_2Cl_2 same as (e)
- (o) IF_5 polar, polar bonds, not symmetrical (square pyramidal)
- (p) AsF_5 non-polar, polar bonds not symmetrical (trigonal bipyramidal)