if the molecular surface of two myoglobin molecule are uprated by a distance of 20 Angstroms diameter of each myoglobin is 40 angstroms diploe moment of myoglobin is 170 D at 20 angstrom and are collinear present then calculate the energy of interaction between two molecules?

Answer: since there is collinearity, and the compound itself is a high-molecular compound in terms of high molecular weight, these two factors favor the calculation of the interaction energy as follows: $W_{ind}=\frac{-\alpha p^2}{2\pi\varepsilon\varepsilon_0 r^6}$, where α -polarizability of the molecule or atomic group; p - dipole moment; r is the distance between molecules, in our case it is 20 Angstroms; ε - relative dielectric constant of the medium; ε_0 – 8.85×10^{-12} F/m – electric constant.