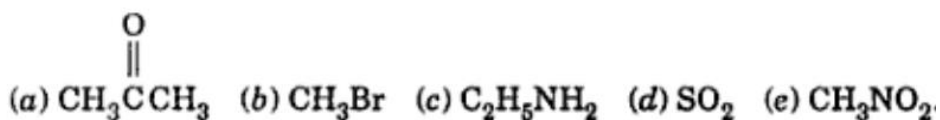
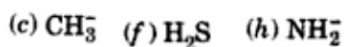


ESERCIZI SVOLTI IN CLASSE:

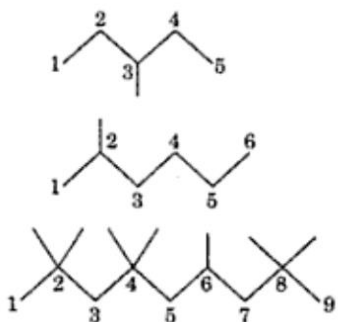
1. Indicate con il simbolo della FRECCIA il momento di dipolo delle seguenti molecole:



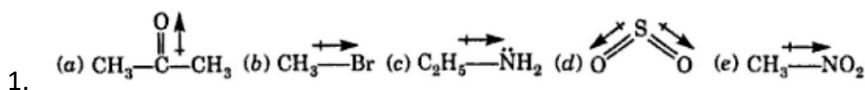
2. L'acqua ha un momento dipolare mentre la anidride carbonica no, perché?
 3. Che geometria hanno i seguenti:



4. Nome IUPAC



SOLUZIONI:



2.



In water there are two O—H bonds which are polar and inclined at an angle of 104.5° . The two bond dipoles do not cancel and the vector sum of bond dipoles give a resultant dipole moment.

The CO_2 molecule, on the other hand, is linear. The C—O bond dipoles are oriented in opposite directions. Since they also have equal magnitude, they cancel. Therefore CO_2 has no dipole moment and is also non-polar.

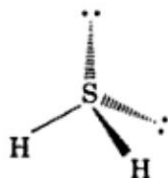
3.

Solution: To arrive at the shape of a molecule, we need to know how many orbitals the central atom can hold (not only the atoms alone attached to it but also unshared pair of electrons.) If it holds four orbitals then it is sp^3 , if three then sp^2 and if two then sp . The shape given below in each case refers to if unshared pair of electrons are included and then if only atoms are included (this is given in parentheses).

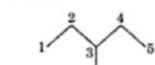
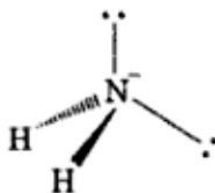
(c) Trigonal pyramidal like NH_3
(tetrahedral with tetrahedral angles)



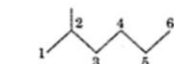
(f) Tetrahedral like H_2O
(flat with a tetrahedral angle)



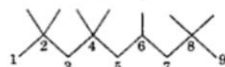
(h) Tetrahedral like H_2O
(flat with a tetrahedral angle).



3-Methylpentane



2-Methylhexane (written as one word)



2,2,4,4,6,8,8-Heptamethylnonane