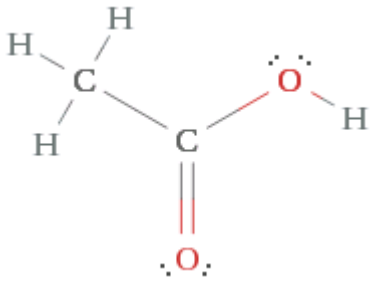
Answer on Question # 60570 - Chemistry - General Chemistry

What are the Lewis structure and formal charges for C, H, O in CH_3COOH?

Solution

The total number of valence electrons in the molecule of acetic acid is 8+12+4 =24. The structure contains six single bonds and one double bond, which take off 16 electrons. Remaining eight electrons will form four lone pairs around oxygen atoms, as it is shown below:



Formal charge= (Valence) – (Number of Nonbonding electrons) – (Number of Bonds);

Formal charge of C is 4 – 0 – 4 = 0;

Formal charge of H is 1 –1= 0;

Formal charge of O is 6 – 2 – 4 = 0.