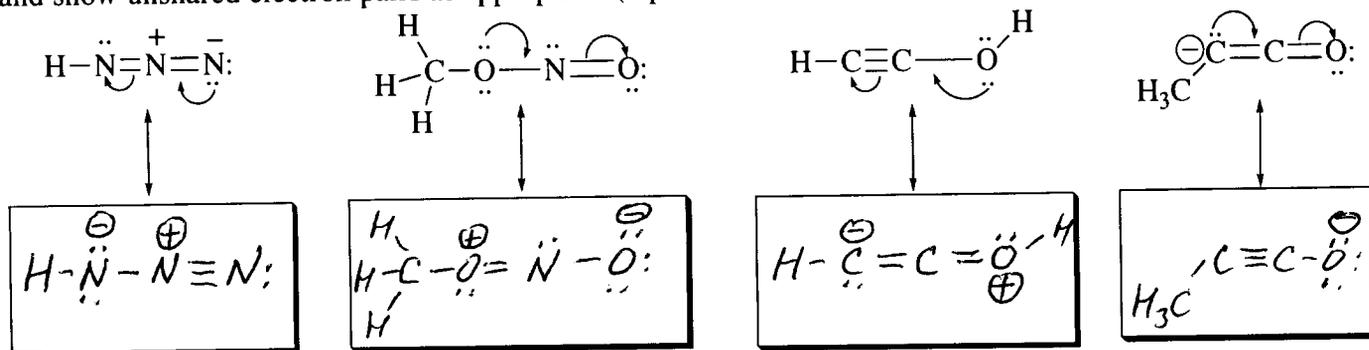


Key

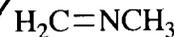
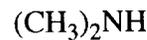
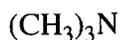
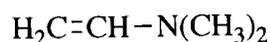
SIGNATURE (required):

Required!

1. (8) Draw the resonance contributing structures indicated by the curved arrows. Assign formal charges and show unshared electron pairs as appropriate (2 pts each contributor).



2. (3) Which of the following structures contains an sp^2 -hybridized nitrogen atom?



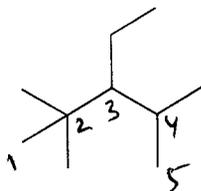
3. (3) Which atomic orbitals of carbon atoms overlap to form C-C σ -bonds in the molecule of CH_3COCH_3 ?

(s and sp^3)(sp^2 and sp^2)

(s and s)

(sp^2 and sp^3)(sp^3 and sp^3)(sp and sp^3)(sp and sp^2)

4. (6) Give either the IUPAC name or the correct structure for each of the following compounds:

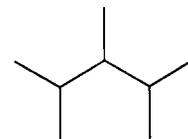


3-ethyl-2,2,4-trimethylpentane

2,2,3,3-tetramethylbutane (line-angle formula):



5. (3) Circle the correct molecular formula for the following line-angle structure:



6. (2) Circle the structure of the compound that has the tertiary carbon atom:

