Full Name: February 22, 2023

0.1 Indicate the molecular formula of the following organic compounds: (a) methane (b) decane

0.2 Indicate the molecular formula of the following organic compounds: (a) ethane (b) butane

0.3 Name the following alkanes: (a) C_5H_{12} (b) C_9H_{20}

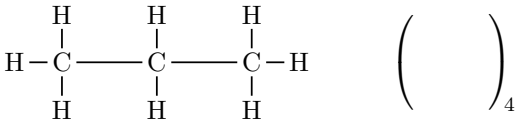
0.4 Name the following alkanes: (a) C_3H_8 (b) C_8H_{18}

0.5 Write down the expanded formula of the following alkanes: (a) pentane (b) decane

0.6 Write down the condensed formula of the following alkanes: (a) hexane (b) propane

0.7 Write down the molecular formula for the chemical below:

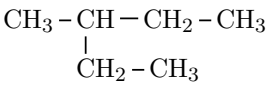
0.8 Write down the molecular formula for the chemical below:



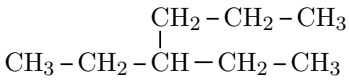
0.9 Write down the expanded formula for hexane.

0.10 Write down the molecular formula for the chemical below:

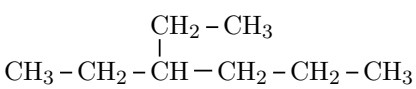
0.11 Give the name for the following compound:



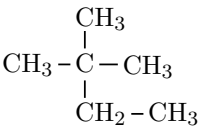
0.12 Give the name for the following compound:



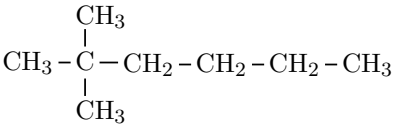
0.13 Give the name for the following compound:



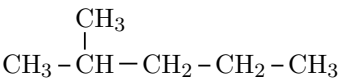
0.14 Give the name for the following compound:



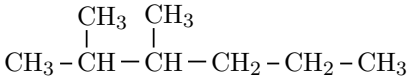
0.15 Name the following compound:



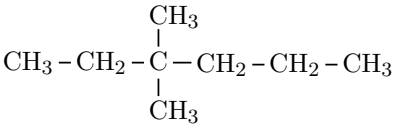
0.16 Name the following compound:



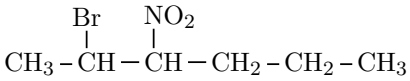
0.17 Give the name for the following compound:



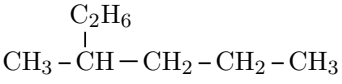
0.18 Name the following compound:



0.19 Give the name for the following compound:



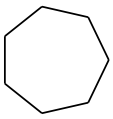
0.20 Give the name for the following compound:



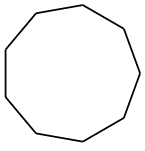
0.21 Indicate the molecular formula of the following cycloalkanes: (a) cyclopropane (b) cyclohexane

0.22 Indicate the molecular formula of the following cycloalkanes: (a) cyclobutane (b) cyclopentane

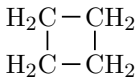
0.23 Name the following cycloalkane:



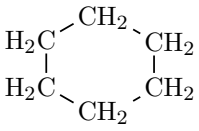
0.24 Name the following cycloalkane:



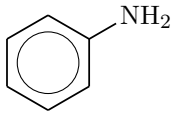
0.25 Name the following compound:



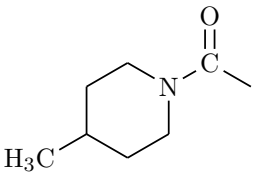
0.26 Name the following compound:



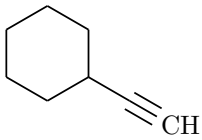
0.27 Identify the functional groups in the following molecule:



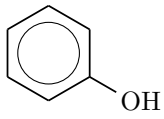
0.28 Identify the functional groups in the following molecule:



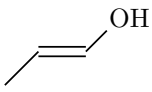
0.29 Identify the functional groups in the following molecule:



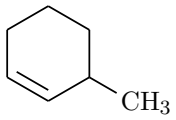
0.30 Identify the functional groups in the following molecule:



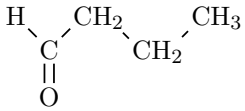
0.31 Identify the functional groups in the following molecule:



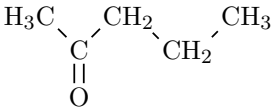
0.32 Identify the functional groups in the following molecule:



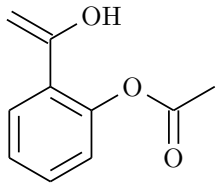
0.33 Identify the functional groups in the following molecule:



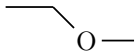
0.34 Identify the functional groups in the following molecule:



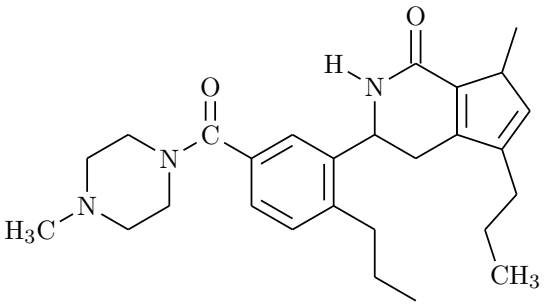
0.35 Identify the functional groups in the following molecule:



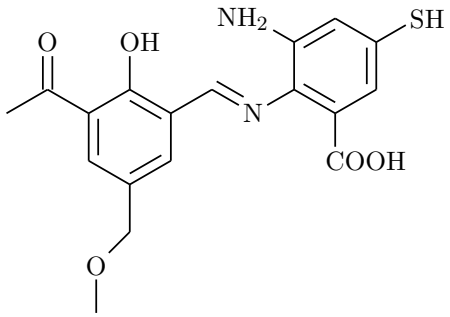
0.36 Identify the functional groups in the following molecule:



0.37 Identify the functional groups in the following molecule:

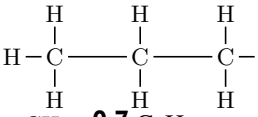
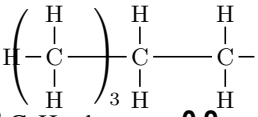


0.38 Identify the functional groups in the following molecule:



0.39 Working in groups, select an everyday-life object (e.g a spoon) and guess whether the materials that made this object are mostly organic or inorganic (e.g mostly inorganic). Without revealing your answer, present the material you selected to another team member and ask him or her to give you his or her point or view regarding whether the materials that made this object are mostly organic or inorganic.

0.40 Classify the following chemicals in two different categories. Give a rationale for your classification. For the group with more chemicals, further classify those chemicals in two categories. (a) KCl (b) C_2H_2 (c) C_4H_{10} (d) $FeO_{(s)}$ (e) C_6H_{12} (f) PH_3 (g) H_2O

Answersv. 25 **0.1** (a) methane (CH_4) (b) decane ($C_{10}H_{22}$) **0.2** (a) ethane (C_2H_6) (b) butane (C_4H_{10}) **0.3** (a) C_5H_{12} (Pentane) (b) C_9H_{20} (nonane) **0.4** (a) C_3H_8 (Propane) (b) C_8H_{18} (Octane) **0.5** (a)  (b)  **0.6** (a) (b) $CH_3 - CH_2 - CH_3$ **0.7** C_8H_{18}, octane **0.8** C_6H_{14},hexane **0.9**

0.10 $C_{10}H_{22}$, decane **0.11** 3-methylpentane **0.12** 3-ethylhexane **0.13** 3-ethylhexane **0.14** 2,3-dimethylbutane **0.15** 2,2-dimethylhexane **0.16** 2-methylpentane **0.17** 2,3-dimethylhexane **0.18** 3,3-dimethylhexane **0.19** 2-bromo-3-nitrohexane **0.20** 2-ethylpentane **0.21** (a) C_4H_8 (b) C_6H_{12}

0.22 (a) cyclobutane C_4H_8 (b) cyclopentane C_5H_{10} **0.23** Cycloheptane **0.24** Cyclononane **0.25** Cyclopropane **0.26** Cyclohexane **0.27** amine and aromatic **0.28** amide **0.29** alkyne **0.30** alcohol and aromatic **0.31** alkene and alcohol **0.32** alkene **0.33** aldehyde **0.34** ketone **0.35** alchol, atomatic, alkene, ester **0.36** ether **0.37** there are an amine, two amides, an aromatic ring and two alkanes **0.38** (top left) ketone; (bottom) ether; (top left) alcohol; (top right) amino and thiol; (bottom left) acid; there are also two aromatic rings **0.39** Not given **0.40** (a) KCl (ionic, inorganic) (b) C_2H_2 (covalent, organic) (c) C_4H_{10} (covalent, organic) (d) $FeO_{(s)}$ (ionic, inorganic) (e) C_6H_{12} (covalent, organic) (f) PH_3 (covalent, inorganic) (g) H_2O (covalent, inorganic)