

Q#	Questions												
1	<p>H<sub>2</sub>S, O<sub>2</sub> and CH<sub>3</sub>OH all have comparable molecular masses. List the dominant type of IMF. (<i>H<sub>2</sub>S is bent like water</i>), then rank the strength of each compound based on IMFs within the samples. (1 = strongest, 2 = in between, 3 = weakest).</p> <table border="1" data-bbox="152 201 802 359"> <thead> <tr> <th>Substance</th> <th>IMF</th> <th>Relative Strength</th> </tr> </thead> <tbody> <tr> <td>HBr</td> <td></td> <td></td> </tr> <tr> <td>O<sub>2</sub></td> <td></td> <td></td> </tr> <tr> <td>CH<sub>3</sub>OH</td> <td></td> <td></td> </tr> </tbody> </table>	Substance	IMF	Relative Strength	HBr			O <sub>2</sub>			CH <sub>3</sub> OH		
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2	<p>Circle the substances below that can form a hydrogen bond in its pure form. Explain why the other species couldn't hydrogen bond.</p> <p>C<sub>2</sub>H<sub>6</sub>    CH<sub>3</sub>NH<sub>2</sub>    KCl    CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>OH    CH<sub>3</sub>OCH<sub>3</sub></p>												
3	<p>Rank the following compounds from weakest intermolecular forces to strongest. Justify your answers.</p> <p>H<sub>2</sub>S    I<sub>2</sub>    N<sub>2</sub>    H<sub>2</sub>O</p>												
4	<p>Rank the following from weakest intermolecular forces to strongest. Justify your answers. (<i>They are all bent like water</i>)</p> <p>H<sub>2</sub>Se    H<sub>2</sub>S    H<sub>2</sub>PO    H<sub>2</sub>Te</p>												
5	<p>Using your knowledge of molecular structure, identify the main intermolecular force in the following compounds. You may find it useful to draw Lewis structures to find your answer.</p> <p>PF<sub>3</sub>    H<sub>2</sub>CO    HF</p>												
6	<p>Explain how dipole-dipole forces cause molecules to be attracted to one another.</p>												
7	<p>Explain how London Forces cause molecules to be attracted to one another.</p>												
8	<p>Rank the following compounds from lowest to highest boiling point: calcium carbonate, methane, methanol (CH<sub>4</sub>O), dimethyl ether (CH<sub>3</sub>OCH<sub>3</sub>).</p>												
9	<p>Explain why nonpolar molecules usually have much lower surface tension than polar ones.</p>												
10	<p>What is the difference between a regular dipole-dipole force and a hydrogen bond force? What is an example of hydrogen bonding that occurs in your body?</p>												

