Coffee GC-MS

Many compounds in coffee are identified using a technique called gas chromatography/mass spectroscopy (GC/MS). In the GC part, the compounds are vaporized and separated into their gaseous forms. The gases feed directly to the MS. Inside the MS, an ion beam knocks an electron off the sample molecule, then sends the ion down into a charged chamber. The distance the ion travels down the chamber is used to calculate the mass to charge (m/z) ratio of the ion, giving the molecular mass of the compound. Because the ions are generally unstable, they also fall apart, usually in pretty predictable patterns. Scientists use the mass of the original ion and the masses of its pieces to identify the compound.

Similarly, the names of the following compounds found in coffee have been broken apart into smaller pieces. Use your smarts (and maybe some help from the coffee article) to reassemble the compounds. An example has been provided.

	GC/MS result	Answer
Example:	*LIFT 2 FUR HOURLY*	*2-FURFURYLTHIOL*
1.	ER WAT	
2.	COS SURE	
3.	CAFE FINE	
4.	FIB OR ANVIL	
5.	I CAN IN	
6.	DECAL HEAD YET	
7.	CLAY TIDE	

*Answers can be found in the Teacher's Guide for the *Is Cold Brew Really Different from Iced Coffee?* article, available online at www.acs.org/chemmatters.

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