FIRE INVESTIGATION

**Which of the following findings from a fire scene suggests that the fire was arson?**

1. Puddle-shaped burn pattern
2. Foreign ignitable liquids in burned material
3. Crazed window glass
4. V-shaped burn pattern

**After a fire, the molten wires in electrical cords often assume the shape of beads. If the demarcation (border) of such a bead is not sharp, it suggests that \_\_\_\_\_\_\_\_\_\_ has caused the fire.**

 

Copper bead with a sharp demarcation. Copper bead with a demarcation that is not sharp

1. burning from the outside
2. an electric spark
3. an ignitable liquid
4. human negligence

**After a fire, window glass often shows a complicated pattern of short cracks, which is called crazing. What causes crazing?**

1. Air pressure from the outside.
2. Air pressure from the inside.
3. Rapid heating of cool glass.
4. Rapid cooling of hot glass.

**What technique would a forensic scientist use to confirm if an ignitable liquid was used to start a fire?**

1. Spectrophotometry
2. Gel electrophoresis
3. Gas chromatography
4. Electron microscopy

TOXICOLOGY

**To confirm if somebody died from smoke inhalation during a fire, the amount of \_\_\_\_\_\_\_\_\_\_ in the blood is determined.**

1. soot
2. clotted erythrocytes
3. deoxyhemoglobin
4. carboxyhemoglobin

**Spectrophotometry is a method that is based on the ability of molecules to \_\_\_\_\_\_\_\_\_\_ light.**

1. absorb
2. emit
3. polarize
4. refract

**You are setting up a headspace gas chromatography analysis to determine the amount of ethanol in a sample. What would you choose as a positive control?**

1. Diluting buffer
2. Water
3. A different alcohol, such as isopropanol
4. Ethanol

**Look at the gas chromatogram below. What do the different peaks represent?**



1. Fragments of one and the same chemical.
2. Different chemicals in the sample
3. Isotopes of one and the same chemical
4. Different amounts of one and the same chemical.

**A suspect has been found to have amphetamines in his blood. What technique can be used to find out which specific amphetamine it is?**

1. Enzyme-Linked ImmunoSorbent Assay (ELISA)
2. Headspace gas chromatography
3. Gas chromatography/Mass spectrometry
4. Spectrophotometry