STUDENT A

Read the text below and write questions to the missing parts. Ask student B your questions to fill the gaps. Then answer student B's questions.

NITROCELLULOSE

Adapted from http://en.wikipedia.org/wiki/Nitrocellulose

Nitrocellulose (also: cellulose nitrate, flash paper) is a highly flammable compound formed by nitrating cellulose through exposure to nitric acid or another powerful nitrating agent. When used as a propellant or low-order explosive, it is also known as **1.** ..... **.** Nitrocellulose plasticized by camphor was used by Kodak, and other suppliers, from the late 1880s as a film base in photograph, X-ray films and motion picture films; and was known as "Nitrate film". After numerous fires caused by unstable nitrate films, safety film started to be used from the 1930s in the case of X-ray stock and from 1948 for **2.** ..... **.**

Henri Braconnot discovered in 1832 that nitric acid, when combined with starch or wood fibers, would produce a lightweight combustible explosive material, which he named *xyloïdine*. A few years later in **3.** ..... another French chemist Théophile-Jules Pelouze (teacher of Ascanio Sobrero and Alfred Nobel) treated paper and cardboard in the same way. He obtained a similar material which he called *nitramidine*. Both of these substances were highly unstable, and were not practical explosives.

However, around 1846 Christian Friedrich Schönbein, a German-Swiss chemist, discovered a more practical solution. As he was working in the kitchen of his home in Basle, he spilled **4.** ..... on the kitchen table. He reached for the nearest cloth, a cotton apron, and wiped it up. He hung the apron on the stove door to dry, and, as soon as it was dry, there was **5.** ..... **.** His preparation method was the first to be widely imitated — one part of fine cotton wool to be immersed in fifteen parts of an equal blend of sulfuric and nitric acids. After two minutes, the cotton was removed and washed in cold water to set the esterification level and remove all acid residue. It was then slowly dried at a temperature **6.** ..... Schönbein collaborated with the Frankfurt professor Rudolf Christian Böttger, who had discovered the process independently in the same year. By coincidence, a third chemist, the Brunswick professor F. J. Otto had also produced guncotton in 1846 and was the first to publish the process, much to the disappointment of Schönbein and Böttger.

STUDENT B

Read the text below and write questions to the missing parts. Answer student A's questions. Then ask student A your questions to fill the gaps.

NITROCELLULOSE

Adapted from http://en.wikipedia.org/wiki/Nitrocellulose

Nitrocellulose (also: cellulose nitrate, flash paper) is a highly flammable compound formed by nitrating cellulose through exposure to nitric acid or another powerful nitrating agent. When used as a propellant or low-order explosive, it is also known as guncotton. Nitrocellulose plasticized by camphor was used by **1.** ....., from the late 1880s as a film base in photograph, X-ray films and motion picture films; and was known as "Nitrate film". After numerous fires caused by unstable nitrate films, safety film started to be used from the 1930s in the case of X-ray stock and from 1948 for motion picture film.

2. ..... discovered in 1832 that nitric acid, when combined with starch or wood fibers, would produce a lightweight combustible explosive material, which he named *xyloïdine*. A few years later in 1838 another French chemist Théophile-Jules Pelouze (teacher of Ascanio Sobrero and Alfred Nobel) treated paper and cardboard in the same way. He obtained a similar material which he called *nitramidine*. Both of these substances were **3.** ....., and were not practical explosives.

However, around 1846 Christian Friedrich Schönbein, a German-Swiss chemist, discovered a more practical solution. As he was working in the kitchen of his home in Basle, he spilled a bottle of concentrated nitric acid on the kitchen table. He reached for the nearest cloth, a cotton apron, and **4.** ..... **.** He hung the apron on the stove door to dry, and, as soon as it was dry, there was a flash as the apron exploded. His preparation method was the first to be widely imitated — one part of fine cotton wool to be immersed in **5.** ..... **.** After two minutes, the cotton was removed and washed in cold water to set the esterification level and remove all acid residue. It was then slowly dried at a temperature below 100 °F (about 38° C). Schönbein collaborated with the Frankfurt professor Rudolf Christian Böttger, who had discovered the process independently in the same year. By coincidence, a third chemist, the Brunswick professor F. J. Otto had also produced guncotton

in 1846 and was the first **6.** ..... , much to the disappointment of Schönbein and Böttger.