Answer on Question # 68263, Chemistry / General Chemistry

If glucose is heated on the concentration tetraoxosulphate(iv)acid, it will be dehydrated

- A. carbon
- B. carbon(IV)oxide
- C. ethane
- D. ethanol

Solution:

Glucose is a carbohydrate, so when you remove the water from the molecule, you're basically left with elemental carbon. The dehydration reaction is a type of elimination reaction.

$$C_6H_{12}O_6 \stackrel{H_2SO_4}{\Longrightarrow} 6C + 6H_2O$$

Although the glucose is dehydrated, the water isn't 'lost' in the reaction. Some of it remains as a liquid in the acid. Since the reaction is exothermic, much of the water is boiled off as steam.

Answer: A.

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