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Glucose is oxidised at an anode releasing electron. The anode is made from gold nanoparticles. Oxygen is reduced at the cathode, which is made from carbon. An anticancer drug is attached to the anode by a piece of DNA. When the drug leaves the anode to fight a cancer cell, the sensor detects an increase in power. The cancer cells are then killed by the drug. The dying cells release a protein which blocks electron transfer in the cathode. The decrease in power signals that the cancer treatment is working.
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1. Glucose has the formula C₆H₁₂O₆. What elements does it contain?
2. Explain how gold conducts electricity.
3. What type of monomer makes up i) DNA ii) proteins?
4. Write a half equation for the reduction of oxygen to form water in acidic conditions.