

(Cells and batteries (chemical cells, rechargeable and non-rechargeable))

Q1. (2018)

copper, zinc, sodium chloride
solution

Q2. (2018)

a reactant is used up

Q3. (2018)

the reaction is not reversible

Q4. (2018)

reasons why fuel cells could be judged as better

from the table	from other knowledge
<ul style="list-style-type: none">time for refuelling a fuel cell is faster than rechargingora fuel cell does not need to be rechargeda fuel cell has a greater range	<ul style="list-style-type: none">hydrogen can be renewable if made by electrolysis using renewable energylithium-ion batteries can catch fireproduces only waterorno pollutants producedlithium-ion batteries may release toxic chemicals on disposallithium-ion batteries (eventually cannot be recharged so) have a finite life

reasons why the lithium-ion battery could be judged as better

from the table	from other knowledge
<ul style="list-style-type: none">lithium-ion uses energy more efficientlycost of lithium-ion car much lesscost of recharging much less than refuelling with hydrogen	<ul style="list-style-type: none">hydrogen is often made from fossil fuels so is not renewablecharging points are more widely available than hydrogen filling stationshydrogen takes up a lot of spaceoris difficult to storehydrogen can be highly flammable / explosiveno emissions produced(catalyst in the hydrogen fuel-cell eventually becomes poisoned so) have a finite life