

(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.a) (2019)

concentration (of solution /
electrolyte)

temperature (of solution /
electrolyte)

Q4.b) (2019)

(most reactive) magnesium
zinc
(least reactive) cobalt

Q4.c) (2019)

0 (volts)

two different metals are needed
to produce a voltage

Q5. (2019)

connect cells (in series)

use $\left(\frac{12}{1.5} = \right)$ 8 cells

Q6.(2019)

electric toy

Q7. (2020)

magnesium **and** copper

(the metals) have the largest
difference in reactivity

Q8. (2021)

(zinc-carbon) cheap(est)

(alkaline) long(est) lasting

(nickel-metal hydride)
rechargeable

Q9. (2021)

any **one** from:

- (metal / alkaline waste) can
be toxic / harmful / corrosive
- (metal / alkaline waste) could
cause pollution in landfill sites
- recycling would save
resources

Q10.a) (2021)

copper and iron

Q10.b) (2021)

any **one** from:

- temperature (of electrolyte / solution)
- concentration (of electrolyte / solution)

Q11.a) (2024)

6 (V)

Q11.b) (2024)

sodium chloride solution

Q11.c) (2024)

- set up a cell
- **add an electrolyte**
- into a beaker
- **add two (different) metals**

- **measure the voltage**
- using a voltmeter

- **repeat using different metals**

- same volume of electrolyte
- same concentration of electrolyte
- same type of electrolyte

- one metal kept the same each time