Solutions

Each answer shows the steps, then the **result**.

2.1

- Liquid that seeps through waste and can pollute groundwater

2.2

- Methane

2.3

- Any one: reduces waste volume, can generate energy

2.4

- for example: lead, mercury or cadmium
- these heavy metals can leach out of the landfill into soil and groundwater, so e-waste should be recycled or specially treated

3.1 B

- stop leachate contaminating groundwater

3.2

(a)

- Landfill – advantage: cheap; disadvantage: uses land / leachate / methane

(b)

- Incinerator – advantage: reduces volume / energy; disadvantage: air pollution / toxic ash / cost

3.3

- The methane can be **captured** and burned as fuel to generate electricity, turning a greenhouse-gas problem into an energy source

3.4

(a)

- P cap, Q methane vent (gas collection) pipe, R bottom liner (clay or plastic), S leachate collection pipe (all four B2; two or three B1)

(b)

- waste is compacted and covered, so little oxygen and moisture reach it
- decomposing microbes need oxygen and water, so few are active and decomposition is very slow

(c)

- for example: water collects in tires and becomes a breeding ground for mosquitoes that spread disease; tire fires release toxic smoke and are hard to put out

3.5 A

- floating plastic is carried by currents into the slowly rotating centre of an ocean gyre, where it accumulates