

Solutions

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

2.1

- light intensity; carbon dioxide concentration; temperature

2.2

- count the oxygen bubbles given off per minute (or collect/measure the volume of oxygen)

3.1 B

- When the curve levels off, light is no longer limiting — another factor is

3.2 B

- Above the optimum the enzymes denature, so the rate falls

3.3

(a)

- moving the lamp closer raises the light intensity, so more light energy is available for the light-dependent stage, increasing the rate

(b)

- any two: temperature; CO₂ concentration; same piece of pondweed; same time counted

3.4

- add DCPIP to an illuminated chloroplast suspension; the dye is reduced by the light-dependent stage and loses its blue colour; time how long the colour takes to disappear at each condition — faster loss means a faster rate