Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

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

2.1

Any two (1 mark each):

- reproduction
- growth
- excretion
- response to surroundings by sensing
- nutrition
- control of internal conditions

2.2

Any two (1 mark each):

- fungal cell walls are made of chitin, not cellulose
- fungi have no chloroplasts
- fungi store glycogen, not starch

3.1

- the hyphae release (secrete) digestive enzymes onto the bread
- the enzymes digest large food molecules into small soluble molecules outside the hyphae
- the hyphae absorb these small molecules (saprotrophic nutrition)

3.2

(a) A: protoctist; B: bacterium

(b) $3 \times 60 \div 30 = 6$ divisions; $2^6 =$ **64** cells; nutrients run out, or waste products build up, or other organisms eat them

(c) points to include:

- A (a protoctist) has a nucleus and chloroplasts, so it makes its own food by photosynthesis (K)
- C (a fungus) has cell walls of chitin and no chloroplasts, so it cannot photosynthesise (K)
- C feeds by secreting enzymes onto food and absorbing the products (saprotrophic) (K)
- an animal cell has no cell wall and no chloroplasts (K)
- animals take in food and digest it inside the body (An)
- A and the animal store food differently: A may store starch; animals and fungi store glycogen (An)

Levels: **5–6** a full, logical answer with correct biology and correct terms; **3–4** several correct points, partly linked; **1–2** one or two relevant points.