

These are the errors that appear year after year in examiner reports. Knowing *what not to write* is just as important as knowing what to write. ★ marks Higher Tier only. Every mistake here has cost students marks in real exams.

## Cell Structures and Microscopy

■ **Students often write:** *"Bacteria are eukaryotic cells."*

✓ **Correct answer:** Bacteria are PROKARYOTIC — they have no membrane-bound nucleus. All three domains: Archaea and Bacteria are prokaryotes; Eukarya (animals, plants, fungi) are eukaryotes.

■ **Examiner insight:** Prokaryotic = no nucleus. Simple rule. OCR often tests this distinction in B1 questions.

■ **Students often write:** *"The electron microscope is better because it magnifies more."*

✓ **Correct answer:** The electron microscope reveals more detail primarily because of its higher RESOLUTION (ability to distinguish two separate points), not just magnification. High magnification + low resolution = blurry enlargement.

■ **Examiner insight:** Resolution = detail level. Magnification = size increase. Always distinguish these two concepts.

## Cell Division

■ **Students often write:** *"Meiosis and mitosis both produce identical cells."*

✓ **Correct answer:** Mitosis produces IDENTICAL diploid cells. Meiosis produces 4 DIFFERENT haploid cells. Meiosis creates variation through crossing over and independent assortment.

■ **Examiner insight:** OCR questions often ask you to compare them. Two key differences: number (2 vs 4) and genetic identity (identical vs different).

## Respiration and Photosynthesis

■ **Students often write:** *"Fermentation is aerobic respiration in yeast."*

✓ **Correct answer:** Fermentation is ANAEROBIC respiration in yeast: glucose → ethanol + carbon dioxide + small amount of energy. It occurs WITHOUT oxygen. Aerobic respiration in yeast (like all organisms) uses oxygen and produces CO<sub>2</sub> and water.

■ **Examiner insight:** Fermentation = anaerobic. Always. Used in brewing (ethanol) and bread-making (CO<sub>2</sub> makes dough rise).

■ **Students often write:** *"Temperature only speeds up photosynthesis."*

✓ **Correct answer:** Temperature increases rate UNTIL the enzyme optimum, then DECREASES it as enzymes denature. Both effects must be described. Above  $\sim 45^{\circ}\text{C}$ , photosynthesis enzymes denature and rate drops to zero.

■ **Examiner insight:** Two-part answer needed: below optimum = faster, above optimum = slower/zero due to denaturation.