Spec ref: 4.1.1.5

KEY FACTS

- Light microscope: max ×1500 magnification, resolution ~200 nm, can view living cells
- Electron microscope: much higher mag and resolution, samples must be dead (in vacuum)
- Resolution = ability to distinguish two separate points as distinct
- To prepare a slide: thin section → stain (iodine/methylene blue) → coverslip at 45°
- When drawing cells: pencil, smooth lines, no shading, label lines must not cross

EQUATIONS / FORMULAS

Magnification: Image size ÷ Actual size

Actual size: Image size ÷ Magnification

KEY TERMS

Magnification	How much larger the image appears vs the real object
Resolution	Ability to distinguish two separate points — determines level of detail
Staining	Dyeing specimens to make cell structures visible

■ EXAM TIP: Always convert units before calculating: 1 mm = 1000 µm. Show all working. Magnification has NO units.