

Mark scheme – Cell Structure (H)

Question			Answer/Indicative content	Marks	Guidance
1			D ✓	1 (AO2.2)	
			Total	1	
2			B	1 (AO 1.2)	
			Total	1	
3			B	1 (AO 2.2)	Examiner's Comments The majority of candidates did not understand the concept of orders of magnitude and choose distractor D as their answer.
			Total	1	
4			B	1 (AO 2.2)	
			Total	1	
5			C ✓	1 (AO 1.1)	
			Total	1	
6			A ✓	1 (AO 1.1)	
			Total	1	
7	a		FIRST CHECK THE ANSWER ON ANSWER LINE If answer = 4×10^{-2} (mm) award 2 marks 0.04 ✓ = 4×10^{-2} (mm) ✓	2 (AO 2.2)	ALLOW correct variations of standard form Examiner's Comments Many candidates could correctly convert the answer of 0.04mm to standard form and so gained 2 marks. There were a number who simply answered 0.04 and so scored one of the available marks.
	b		increased resolution / high magnification / sub-cellular structures visible ✓ (can only be done on) dead material / thin sections only / gives 2-D / expensive (equipment) / possible distortion of material in preparation / less mobile / preparation	2 (AO 2.2)	IGNORE clearer/sharper/more detailed images / can see small cells Examiner's Comments Candidates displayed a good knowledge of

		takes longer/is more complex / (only) black and white images ✓		the advantages and disadvantages of the TEM and full marks were common here.
		Total	4	