

Question			Answer	Marks	Guidance
17	(a)	(i)	$10^8$ <b>OR</b> $1 \times 10^8$ <b>OR</b> 100 000 000  ✓✓	2	<b>If answer is incorrect ALLOW one mark</b> <i>For evidence of correct working</i> i.e. $10^9 \div 10^1$
	(a)	(ii)	liver has , large / good / AW , blood supply ✓  released / secreted / AW , into bile ✓	2	<b>IGNORE</b> reference to C-reactive protein and copeptin throughout  <b>ALLOW</b> liver has sinusoids
17	(b)	(i)	$3157 \mu\text{m}^3$ / $3.157 \times 10^3 \mu\text{m}^3$ <b>OR</b> $3155 \mu\text{m}^3$ / $3.155 \times 10^3 \mu\text{m}^3$ (3.14 used for value of $\pi$ ) <b>OR</b> $3158 \mu\text{m}^3$ / $3.158 \times 10^3 \mu\text{m}^3$ (22/7 used for value of $\pi$ ) <b>OR</b> $3.157$ / $3.155$ / $3.158$ , $\times 10^{-15} \text{m}^3$ (answer using SI units)  ✓✓✓	3	<b>ALLOW for two marks</b> <i>correctly calculated value not given to 4SF</i> e.g. $3156.55 \mu\text{m}^3$ $3157.82 \mu\text{m}^3$ (22/7 used) $3154.95 \mu\text{m}^3$ (3.14 used) <b>OR</b> <i>correctly calculated value without units</i> e.g. 3157 / 3.157 <b>OR</b> <i>correctly calculated value with inappropriate units</i> e.g. $3.157 \times 10^{-6} \text{mm}^3$ $3.157 \times 10^{-9} \text{cm}^3$  <b>If two or three marks were not awarded for the correct answer or calculated value:</b> <b>for one mark</b> look for evidence of use of the formula:  $(4/3) \times \pi \times r^3$

Question			Answer	Marks	Guidance
17	(b)	(ii)	(transmission) electron (microscope) ✓  <b>AND ONE</b> of the following:  2D image ✓  internal details visible ✓  (named) organelles / ultrastructures , visible ✓  high <u>magnification</u> ✓  high <u>resolution</u> ✓	2 max	<b>ALLOW</b> TEM <b>DO NOT ALLOW</b> scanning electron microscope / SEM  <b>IGNORE</b> black and white / colour  e.g. mitochondria <b>IGNORE</b> nucleus (as visible under a light microscope)
			<b>Total</b>	<b>9</b>	