Question number	Answer	Notes	Marks
1 (a) (i)	cell <u>membrane</u>; nucleus (must be lobed); cytoplasm;	ignore shape of cell must be labelled if cell wall no credit for membrane	3
(ii)	nucleus / bigger / irregular / not (bi)concave / eq / no haemoglobin;	allow converse	1
(b)	1 ingest / engulf / surround / phagocytosis / eq; 2 enzymes; 3 digest / breakdown / eq; 4 lymphocytes; 5 antibodies / antitoxins; 6 specific / eq; 7 antigen: 8 memory / memory cell / eq;		Max 5
		Total	**9**

Question number	Answer	Marks
2 (a) (i)	A: palisade (cell) / mesophyll / vacuole; R spongy B: guard cell;	2
(ii)	reduce water loss/transpiration/evaporation; prevent entry of microorganisms; Ignore waterproof	1
(iii)	carbon dioxide + water; glucose + oxygen; allow correct chemical formula	2
(iv)	diffusion / diffuses; stomata / pores / holes; concentration gradient / eq;	2
(b)	reduce water loss; less light; less photosynthesis; conserve energy / eq;	Max 2
(c)	named organ and substance: lungs + carbon dioxide / water kidney + urea / urine / water / salts / eq skin + sweat / water / salts / urea / eq liver + bile;;	2

Total 11 Marks

<table>
<tr><th>Question number</th><th>Answer</th><th>Marks</th></tr>
<tr><td>3 (a)</td><td>
<table>
<tr><th>Characteristic</th><th>Description</th></tr>
<tr><td>nutrition</td><td>feeding / eating / nutrients / energy / eq;</td></tr>
<tr><td>respiration;</td><td>releasing energy in cells</td></tr>
<tr><td>reproduction;</td><td>producing offspring</td></tr>
<tr><td>growth and development</td><td>increase in size / more cells / cell division / eq;</td></tr>
</table>
</td><td>4</td></tr>
<tr><td>(b) (i)</td><td>cell wall / cellulose;
vacuole;
chloroplast / chlorophyll;
starch;</td><td>Max 2</td></tr>
<tr><td>(ii)</td><td>cell wall / (no) protein coat;
cell membrane;
cytoplasm / cell organelles; Ignore nucleus
plasmids / <u>only</u> DNA;
flagellum;
larger;
slime capsule;</td><td>Max2</td></tr>
</table>

Total 8 Marks

Question number	Answer	Notes	Marks
4 (a) (i)	correctly labelled;	ignore other labels if label line goes to wall and membrane = 0	1
(ii)	cell wall; chloroplast; vacuole;	ignore chlorophyll	3
(b) (i)	LHS / water level lower than RHS / sucrose level;	labelling not required	1
(ii)	osmosis;	ignore diffusion	1
		Total	6