Question number	Answer	Notes	Marks
1 (a)	water / H_2O; mineral(s) / ion(s) / salt(s) / named mineral/ion/salt;	ignore sugar / alcohol / hormones	2
(b) (i)	high conc. to low conc. / eq;		1
(ii)	(partially permeable) membrane / small molecules / eq; water;		1
(iii)	high conc. to low conc. / conc. gradient; partially permeable (membrane/tubing) / eq; diffusion;		2
(iv)	same conc. in fluid and blood / normal blood conc. in fluid / correct glucose conc. in fluid / eq; if high in blood moves out of blood/into fluid; if low in blood moves into blood/out of fluid;		2
(v)	ultrafiltration; small molecules or named small molecule out of blood / large molecules or protein stay in blood / pressure / Bowman's capsule / glomerulus / eq; (selective) reabsorption; glucose / ions / amino acids / water; active transport; glucose / energy / low to high conc. / eq;	mark in pairs – only allow marks from two named processes	4

Question number	Answer		Marks
1 (c) (i)	renal vein and renal artery; ureter;		2
(ii)	nearer to bladder / closer to where waste goes / eq; easier access / closer to surface / eq; ref. to length of tubes/blood vessels /eq;		2
		Total	16

Question number	Answer	Notes	Marks
2 (a) (i)	1. beef increases; 2. fish slow/constant/steady/little change <u>and</u> then increase rapidly / eq; 3. more beef than fish at start; 4. more fish than beef at end / fish overtakes beef;	 2. must have slow and then rapid	Max 3
(ii)	13 x 6 = 78 / range between 72 and 84;;	allow one mark for x 6 in working	2
(b)	1. <u>digestion</u> / <u>digested</u> / <u>digest</u>; 2. rotease / pepsin; 3. hydrochloric acid / HCl; 4. low pH / pH 2 / optimum pH; 5. amino acids / peptides;	1. gnore breakdown allow physical or chemical digestion 2. gnore enzyme digestive enzyme = 1 4. ignore best pH	Max 4

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>(c)</td><td>
<table>
<tr><th>Protein molecule</th><th>Function of protein molecule</th><th>Place where protein molecule is made</th></tr>
<tr><td>(haemoglobin)</td><td>transport oxygen / carries oxygen / bind to oxygen;</td><td>(red blood cells)</td></tr>
<tr><td>amylase / carbohydrase;</td><td>(digest starch)</td><td>(salivary gland)</td></tr>
<tr><td>(insulin)</td><td>lower <u>blood</u> glucose / glucose to glycogen / cells absorb glucose;</td><td>pancreas;</td></tr>
<tr><td>antibody;</td><td>(binds to antigens on pathogens)</td><td>white blood cell / lymphocyte;</td></tr>
</table>
</td><td>ignore control ideas

allow blood sugar</td><td>6</td></tr>
</table>

Total 15 marks

Question number	Answer	Notes	Marks
3 (a) (i)	1. stop release of carbon dioxide; 2. respiration; 3. bacteria / fungi / microorganisms / decomposers / soil organisms / eq;	ignore evaporation of water	2
(ii)	control / to make a comparison / to show photosynthesis needs carbon dioxide / to show plants need carbon dioxide / difference due to carbon dioxide / eq;		1
(iii)	1. (sun)light; 2. water / moisture / humidity; 3. temperature; 4. soil / minerals / nutrients / ions / eq; 5. number of leaves / mass of plant / eq;		2

Question number	Answer	Notes	Marks
3 (b) (i)	1. <u>boil/heat/warm</u> in ethanol / alcohol; 2. test for starch;		2
(ii)	denature enzymes / eq;	reject kill enzymes	1
(iii)	high to low concentration / down concentration gradient / eq;	ignore along concentration gradient	1
(iv)	A = yellow / brown / orange; B = blue / black / blue black / eq;	ignore green / white red ignore purple	2

(Total for Question = 11 marks)