Question number	Answer	Notes	Marks
1 (a)	1 (feed on) dead / rotting / decomposing / eq; 2 enzyme(s); 3 extracellular / outside / external / eq; 4 digests / digestion / digestive; 5 absorption / eq;		max 2
(b) (i)	D;		1
(ii)	B;		1
(c) (i)	chlorophyll;	ignore chloroplasts	1
(ii)	carbon dioxide + water; glucose + oxygen;	ignore light / ignore chlorophyll ignore energy allow if correct symbols and correct formulae ignore balancing	2
		Total	**7**

Question number	Answer	Notes	Marks
2 (a)	evaporation / loss of water / diffusion; surface of plant / stomata / from leaves / from plant / eq;		2
(b)	stop water loss (from soil) / stop evaporation (from soil) / water can only be lost through plant / eq;	ignore prevent water into soil	1
(c)	kinetic energy; molecules move faster / eq; stomata; open in light / close in dark; diffusion / evaporation / transpiration;	ignore guard cells	4
		Total	7

Question number	Answer	Notes	Marks
3	C different calcium / range of calcium / eq; O same age / strain / species / gender / eq; R several rats / different groups / eq; M1 mass / eq; M2 one day plus / eq; S1 + S2 same mass food / type of food / diet / water / same cage / temperature / eq;		6
		Total	6

Question number	Answer	Notes	Marks
4 (a)	stomata / guard cells; spongy (mesophyll) / spongy (layer) / air spaces / eq; moist; thin; large surface area;	ignore wide and flat	Max 3
(b)	$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$;; $CO_2 + H_2O \rightarrow C_6H_{12}O_6 + O_2$ = 1	allow one mark for correct equation and correct formula and a second mark for correct balance formula wrong = 0 eg. CO2 = wrong but CO_2 = correct reject word equation ignore light/chlorophyll/energy	2
(c) (i)	dark for 12 hours plus;		1
(ii)	keep in dark / no light / cover leaf surface / eq;		1
(iii)	boil/heat/warm in ethanol/alcohol; safety: water bath / no flame / eq; iodine; blue black / eq;	tube of ethanol in water bath = 2 ignore tongs / gloves etc allow black / dark black / dark blue / blue	3

Total 10 marks

Question number	Answer	Notes	Marks
5 (a) (i)	A; (C) B; A;	Only one letter in each box	3
(ii)	1. (le) <u>emulsification</u> / <u>emulsifies</u>; 2. small(er) d ps / increased surface area / more drops; 3. optimum pH / correct pH / best pH; 4. ipase) is an enzyme; 5. d estion / breakdown; 6. i o <u>fatty acids</u> / into <u>glycerol</u>;		4
(b)(i)	villus / villi;	allow phonetic spelling	1

(ii)	1. larg surface area; 2. crovilli ; 3. pillaries; 4. vement of blood / concentration gradient / eq; 5. o cell thick / thin wall / thin / short distance; 6. ffusion; 7. active ansport;	1. ignor many villi idea 4. ig re cell wall	5

Total 13 marks

Question number	Answer	Notes	Marks
6 (a)	(trap/absorb) light / eq; chlorophyll; photosynthesis / starch / glucose / eq;	ignore trap energy	2
(b)	A cell wall; B vacuole; C cytoplasm;		3
(c) (i)	C; A;		2
(ii)	starch removed / starch used / no starch / eq; (converted to) glucose; respiration / energy;		2
(iii)	boil (in ethanol) / heat (in ethanol)/ eq; ethanol / alcohol; no naked flame / water bath / hot water / in water / eq;	allow water mark if linked to boil / heat	3
(iv)	iodine / iodide;		1
		Total	13