Question number	Answer	Notes	Marks
1 (a)	*Lactobacillus (bulgaricus) / Streptococcus (thermophilus)*;	ignore lactic acid bacteria	1
(b)	sterilise / kill / pasteurise; bacteria / microorganisms / pathogens / eq;	ignore get rid of ignore denature enzymes ignore taste / competition / contamination / disease	2
(c)	1 avoid killin *Lactobacillus* / bacteria / organisms (that make yoghurt); 2 optimu temperature; 3 enzy es; 4 (enzymes) denatured / destroyed;	ignore denature organism allow converse ignore make lactic acid / make yoghurt	2
(d)	(time) to make lactic acid; (warm) optimum temperature; enzymes; bacteria reproduction / bacteria growth / eq;		max 2
(e)	kills bacteria / stop growth of bacteria; low pH / more acid / acidic / lactic acid / eq; denatures/destroys enzymes / alters active site / eq;	allow microbes as eq to bacteria denatures bacteria = 1	3
		Total	

Question number	Answer	Notes	Marks
2 (a)	1. (nitri ing) bacteria; 2. ammonia/ammonium / into nitrites/NO_2 or nitrite into nitrate;	reject incorrect named bacteria such as nitrogen fixing allow Nitrosomonas / Nitrobacter ignore ammonia into nitrate	2
(b)	(root) nodules; 2. *Rhizobiu* / nitrogen fixing bacteria; 3. nit gen (gas) into nitrates / ammonia / ammonium; 4. ino acids / proteins; **(ONCE)** 5. growt / higher yield; 6. de mposition / decomposers / decay / rotting / eq; 7.(decomposing) bacteria / fungi / eq; 8. mineral (ions) / salts / nutrients / named mineral ion;	ignore fertiliser only allow point 8 if it is clear that the mineral ion has come from decomposition	Max 4
(c)	respiration; not all eaten; not all digested;		Max 2

Total 8 marks

Question number	Answer	Notes	Marks
3 (a)	1. eat (more) plants / eats grass / eq; 2. food difficult to digest / less food digested / break down less food / food egested / eq; 3. cellulose;	allow converse for fish	2
(b)	1. re cells / bigger; 2. at loss; 3. u more energy in movement;	3. igno move more	1
(c)	1. keep indoors; 2. less heat loss / maintain body temperature / less energy loss / keep warm; OR 3. restrict movement / eq; 4. less respiration / less energy used; OR 5. more digestible food / food with more energy / food with more fat; 6. more energy absorbed;		4

Total 7 marks

Question number	Answer	Notes	Marks
4 (a)	low in fat / eq; heart disease / blocks blood vessels / eq; high in protein / amino acids; growth / repair / eq; ignore muscles		2
(b)	conserves snail / natural populations / less collected / eq;		1
(c)	spider(s);		1
(d)	calcium / phosphate;	allow if in list with other ions	1
(e) (i)	cannot digest/breakdown cellulose / fibre / roughage; no absorption of cellulose / fibre / roughage; lack enzyme / cellulase; lack symbiotic organisms;	ignore converse	max 2
(ii)	70;; one for 2.8 in working		2

(f)	(more) (glucose) metabolism / (more) respiration; heat loss / need to maintain body temperature / keep warm / eq; more active / more movement;	ignore energy use / energy loss allow converse for snails allow converse for snails allow converse for snails	2
(g) (h)	humans + (select) desired characteristics (for breeding) / eq; (no) bacteria / microorganism / fungi / pathogen / infection / disease / parasites / eq;	allow human terms such as you / we / farmers ignore germs	1 1

TOTAL 13 MARKS