

Question number	Answer	Notes	Marks
1 (a)	<i>Lactobacillus (bulgaricus)</i> / <i>Streptococcus (thermophilus)</i> ;	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 <u>killin</u> <i>Lactobacillus</i> / bacteria / organisms (that make yoghurt); 2 <u>optimu</u> 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) <u>optimum</u> 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. <i>Rhizobiu</i> / nitrogen fixing bacteria; 3. <u>nit gen</u> (gas) into nitrates / ammonia / ammonium; 4. amino acids / proteins; (ONCE) 5. growth / higher yield; 6. decomposition / 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
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 <u>cellulose</u> / <u>fibre</u> / <u>roughage</u> ; no absorption of <u>cellulose</u> / <u>fibre</u> / <u>roughage</u> ; 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)	humans + (select) desired characteristics (for breeding) / eq;	allow human terms such as you / we / farmers	1
(h)	(no) bacteria / microorganism / fungi / pathogen / infection / disease / parasites / eq;	ignore germs	1

TOTAL 13 MARKS