



Question number	Answer	Notes	Marks
1 (a)	1. cell membrane; 2. cytoplasm; 3. chromosome / nucleoid; 4. plasmid(s); 5. flagellum; 6. cilia; 7. ribosome; 8. capsule;	3. ignore DNA 4. ignore circle of DNA ignore incorrect structure label ignore correct structure labelled incorrectly or doesn't look like correct structure eg plasmid going to a straight line in cytoplasm	3
(b)(i)	S vertical scale linear and at least half grid; L neat lines drawn for bars; A axes labelled number of people and type of food / names of foods; P bars at correct height for ill and dead; K key to show ill and dead;	If scale not linear lose S and P Line graph loses L	5



(ii)	1. cheese; 2. indication of working 22% / 21.9% / 21.97% risk of death / 78% chance of living / ratio of 4.55;		2
(c)	1. kill/destro bacteria / eq; 2. whi blood cells; 3. <u>ph ocytes / macrophage</u> ; 4. engulf / surround / ingest / digest / eat / eq; 5. <u>lymp cytes</u> ; 6. antibodies / anti xins; 7. (b d to) antigens; 8. mory cells;	phagocytosis = 2 lymphocytes engulf = allow lymphocyte mark only phagocytes produce antibodies all phagocyte mark only white blood cells engulf = 2 white blood cells produce antibodies = 2	5

Total 15 marks



Question number	Answer			Notes	Marks
2 (a)	Effect	Name of hormone	Source		5
	converts glucose to glycogen	(insulin)	(pancreas)		
	stimulates male secondary sexual characteristics	testosterone;	(testis)		
	increases permeability of the collecting duct	ADH;	hypothalamus / pituitary;		
	repairs uterus lining	oestrogen;	ovary;		

Allow reasonable spellings

Question number	Answer	Notes	Marks
(b)	1. soluble / dissolves; 2. osmotic effect / eq;	Ignore small	2
(c)	X;		1

Total 8 marks



Question number	Answer	Notes	Marks																
3 (a)	<table border="1"><thead><tr><th>Group</th><th>Can carry out photosynthesis</th><th>Have a cell wall</th><th>Can be pathogenic</th></tr></thead><tbody><tr><td>bacteria</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>fungi</td><td></td><td>✓</td><td>✓</td></tr><tr><td>viruses</td><td></td><td>X</td><td>✓</td></tr></tbody></table>	Group	Can carry out photosynthesis	Have a cell wall	Can be pathogenic	bacteria	✓	✓	✓	fungi		✓	✓	viruses		X	✓	hybrid cross tick = 0 blank = 0 8 = 4 7/6 = 3 5/4 = 2 3/2 = 1 1/0 = 0	4
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(b)	<table border="1"><thead><tr><th>Characteristic</th><th>Example of this process</th></tr></thead><tbody><tr><td>they require nutrition</td><td>eating food</td></tr><tr><td>they respire</td><td>releasing energy from carbohydrate</td></tr><tr><td>movement / eq;</td><td>some animals can fly</td></tr><tr><td>they control their internal conditions</td><td>blood glucose / blood pressure / body temperature / sweating / osmoregulation / eq;</td></tr><tr><td>reproduce / eq;</td><td>increase of the population of foxes</td></tr><tr><td>they grow</td><td>cells divide / increase in mass / size / get bigger / increase in height / eq;</td></tr></tbody></table>	Characteristic	Example of this process	they require nutrition	eating food	they respire	releasing energy from carbohydrate	movement / eq;	some animals can fly	they control their internal conditions	blood glucose / blood pressure / body temperature / sweating / osmoregulation / eq;	reproduce / eq;	increase of the population of foxes	they grow	cells divide / increase in mass / size / get bigger / increase in height / eq;		4		
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3 (c)	receptor / nerve ending; sensory neurone / sensory nerve; impulse / message / signal; CNS / spinal cord / grey matter; synapse; relay neurone / relay nerve; motor neurone ; muscle / effector; contract;	sensory or motor not in correct order = 0 ignore brain allow intermediate / association;	5
		Total	13



Question number	Answer	Notes	Marks
4 (a)	<u>small surface area to volume</u> (ratio); less heat loss / less energy loss maintain body temp. / keep warm / fat insulation / eq;	allow small surface area to mass (ratio)	2
(b)	<u>insulation</u> / <u>insulator</u> / <u>insulated</u> ; trap air; less heat loss / less energy loss / maintain body temp. / keep warm / trap heat / eq;		max 2
5 (c) (i)	muscles kept warm / eq; <u>contract</u> ; respiration; enzymes / optimum;	allow converse ignore work / move ignore answers that describe position in feet	max 3
(ii)	strong / not elastic / eq;	allow descriptions of strength eg will not snap strong and elastic = 0	1
(d)	less heat loss / less energy loss / maintain body temp. / keep warm / share body heat / trap heat / eq; shelter / protect / not exposed (cold/wind) / eq; decrease SA: Vol;	ignore protect from predators	2

TOTAL 10 MARKS

Question number	Answer	Notes	Marks
5	<p>C noise and no noise / range of noise;</p> <p>O same species / mass / seeds / amount of crop / eq;</p> <p>R replication evident;</p> <p>M1 mass eaten / number eaten / count birds / eq;</p> <p>M2 time period stated;</p> <p>S1 weather / season / temperature / wind / same time of day / eq;</p> <p>S2 same number / species of bird / same area / field size / quadrat / eq;</p>	<p>allow amount / how much / how many</p> <p>allow temperature if in field</p> <p>ignore same field</p>	max 6

TOTAL 6 MARKS