

Biology 3

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept
1		(a)		2	palisade; spongy;			sponge
		(b)	i	1	photosynthesis;			
			ii	1	carries sugar(s);	carries sucrose		carries glucose
			iii	1	respiration, starch;			
		(c)		1	<u>controls</u> {loss of water /transpiration}/ allows {gases/correctly named gas} to pass in or out/ allows gas exchange;	CO ₂		Air CO ²
		Total Mark		6				

Question Number		Sub-section			Mark	Answer	Accept	Neutral answer	Do not accept
2		(a)	i		1	vena cava;	caval vein		
			ii		1	two correct arrows drawn; aorta arrow points to the body X arrow points to the heart;			
			iii		2	lungs; systemic;			systematic
		(b)	i		1	capillary;	capillaries		
			ii		2	walls are thin; so allow for <u>diffusion</u> ;	walls one cell thick		
		Total Mark			7				

Question Number		Sub-section			Mark	Answer	Accept	Neutral answer	Do not accept			
FT	HT											
3		(a)	i		2	plots correct $\frac{1}{2}$ small square tolerance all correct = 2 marks 1 error = 1 mark >1 error = 0 marks Line;						
			ii		1							
		(b)			1	94;						
		(c)	i		1	45 [bpm];						
			ii		2	$(86/85) - (73/72)$ = 14/13/12; Correct answer = 2 marks Correct readings = 1 mark						
			iii		1	Person1 – returns to normal in shorter time/ Person 2 – shows a greater increase (after running);				Reverse arguments		
		(d)	i		1	More people/ repeats;						Fair testing
			ii		1	same age/ same level of {sporting activity/ fitness level}/ OWTTE;						Same sex
Total Mark					10							

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept
FT	HT							
4		(a)		3	B and <u>urine</u> out of kidney/ to bladder ; D and urethra (1) correct spelling only Bladder and {stores/holds} urine;	Keeps urine		
		(b)	i	1	Any 2 for 1 mark (excess) water, salt(s) and urea;	One correctly named salt		
			ii	1	Increased/ becomes stronger/ gets higher;			
		Total Mark		5				

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept	
FT	HT								
5		(a)	i	1	There were 800 tonnes 2001 and 1100 tonnes in 2011/ there is an increase from 2001 to 2011;				
			ii	2	(1 100 – 800)/10; 30 [tonnes per year]; Correct answer = 2 marks Incorrect answer but correct method = 1 mark				
			iii	I	1	<u>break down</u> plastic;		Feeding on plastic/ destroys plastic	
				II	1	pathogen / cause disease;		Releasing harmful chemicals	
			iv		2	phthalates/ organic toxins; could be taken up {by organisms/ in feeding/ in food chains} / bioaccumulation;		Poisons organisms	
			(b)		1	ethanol/ alcohol;	Carbon dioxide		
			Total Mark		8				

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept								
6	1	(a)		3	<table border="1"> <thead> <tr> <th>Field</th> <th>Signs of mineral nutrient deficiencies shown by the wheat plants</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>poor growth/ reduces growth;</td> </tr> <tr> <td>B</td> <td>yellowing of leaves;</td> </tr> <tr> <td>C</td> <td>poor root growth;</td> </tr> </tbody> </table>	Field	Signs of mineral nutrient deficiencies shown by the wheat plants	A	poor growth/ reduces growth;	B	yellowing of leaves;	C	poor root growth;	Stunted growth/ reduces growth of stems and roots		Reduces growth of stems/ reduces growth of roots
Field	Signs of mineral nutrient deficiencies shown by the wheat plants															
A	poor growth/ reduces growth;															
B	yellowing of leaves;															
C	poor root growth;															
		(b)		1	{Spread/ spray/use/ add} { <u>NPK/ fertilizer/ slurry/ manure</u> };	Green manure/ clover/ legume crops being ploughed in		Fertilising the plant								
		Total Mark		4												

Question Number		Sub-section		Mark	Answer	Accept	Neutral answer	Do not accept
7	2	(a)		2	A choroid; B optic nerve;	Phonetic spelling B: sclera/ sclerotic		
		(b)		Max 4	<ul style="list-style-type: none"> • In Diagram 1 the eye is in dim light; • <u>iris</u> (muscle) makes <u>pupil larger</u>; • to allow more light into the eye; • (In Diagram 2) the eye is in bright light and the reverse has happened (OWTTE); OR <ul style="list-style-type: none"> • In Diagram 2 the eye is in bright light; • <u>iris</u> (muscle) makes <u>pupil smaller</u> ; • to reduce the amount of light entering the eye; • In Diagram 1 the eye is in dim light and the reverse has happened (OWTTE); 			
		Total Mark		6				

Question Number				Mark	Answer	Accept	Neutral answer	Do not accept
8	3	(a)	i	1	B A D C	B in the top row, A in the second, D in the third C in the fourth		
			ii	1	To prevent {entry / exit} of bacteria/ contamination by bacteria;	micro-organisms/ fungi/ microbes as alternative to bacteria		
		(b)	i	3	PLATE 1 10 °C; PLATE 2 4 °C; PLATE 3 35 °C;			
			ii	1	7;			7 colonies
			iii	2	bacteria on the inoculating loop would not have been killed/ loop would not have been sterilised; therefore the agar would have {bacteria/ micro-organisms} growing on it which would have <u>not come from the milk</u> / contaminated with bacteria <u>not from the milk</u> ; OR the loop is flamed to ensure all micro-organisms on it are killed; only bacteria from the milk are grown;	micro-organisms/ fungi/ microbes as alternative to bacteria		Loop not clean
Total Mark				8				

Question Number		Mark	Answer
FT	HT		
9	4	6 QWC	<p><i>Indicative content:</i></p> <ul style="list-style-type: none"> • platelets form a blood clot • which seals the wound/ stops the bleeding • to prevent entry of microbes/bacteria • white blood cells/phagocytes {ingest/engulf} microbes/bacteria NOT destroy • white blood cells/lymphocytes produce antibodies* • which inactivate certain bacteria/microbes/viruses • white blood cells/lymphocytes produce antitoxins* • which inactivate/counteract toxins released by bacteria/microbes <p>*Needed for top band</p> <p>5-6 marks The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.</p> <p>3-4 marks The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.</p> <p>1-2 marks The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.</p> <p>0 marks The candidate does not make any attempt or give a relevant answer worthy of credit.</p>
Total Mark		6	