

Question		Marking details	Marks Available
6/1	(a)	(i) extinct in the wild/ extinct;	1
		(ii) It will be {reduced/lower/smaller}/ there will be fewer species/less diverse;	1
	(b)	(i) Because they are receiving payment/they do not want the monkey to become extinct/ stop it becoming extinct;	1
		(ii) Any two from <ul style="list-style-type: none"> • Link up the remaining isolated pocket of rainforest (OWTTE); • Extend the corridors outside the area shown in the diagram (OWTTE); • {Widen/ thicken} corridors/ increase area of corridor; NOT larger • More than one corridor to each area; 	Max 2
(c)	(iii) Any two from: monkey can extend its range/increased habitat/more {area/space} to live in/can {move/spread} to different areas; breed with other monkeys outside its own pocket of rainforest; correct ref to gene pool; increase food {source/variety}/less competition for food; escape predation; isolated population have more chance of dying from disease;	Max 2	
	Any one from: SSSIs; captive breeding programme; NOT breeding in zoos/wildlife parks alone National parks; seed banks; {wildlife/nature} reserve; Legislation on deforestation;	Max 1	
		Question 6/1 Total	[8]

Question		Marking details	Marks Available		
7/2	(a)	(i) All correct 2 marks 1 error 1 mark, 2 errors 0 marks	2		
				Inspired air (%)	Expired air (%)
		Oxygen		21	16
		Carbon dioxide		0.03/0.04	4
		Nitrogen		79	79
	Water vapour	varies	1		
		(ii) (16%) oxygen in {expired air/air breathed out};	1		
	(iii) Sodium hydroxide/potassium hydroxide/soda lime; Accept Sofnolime (trade name in diving community)	1			
	(b) (i) (The lime water in test tube A {remains/is}) {clear/colourless}; NOT no change/does not go cloudy/stays the same (The lime water in test tube B would turn) milky/cloudy;	2			
	(c) Any one from Can {remain submerged/stay down} for longer; Smaller tank needed;	Max 1			
		Question 7/2total	[7]		

Question		Marking details	Marks Available
8/3	(a)	The more cigarettes smoked the higher deaths. The more cigarettes smoked higher {incidence/ chances} of lung cancer (OWTTE); {lag/delay/gap} {between commencement of/ time that they smoke/ smoking/ cigarette consumption} and possibility of (death from) lung cancer (OWTTE); Accept the more cigarettes smoked, the higher the deaths from lung cancer and these are roughly 20 years apart = 2 marks	2
	(b)	Accept any year between 1943 & 1947;	1
		Question 8/3 total	[3]

Question			Marking details	Marks Available
5	(a)	(i)	Peristalsis;	1
		(ii)	<u>Muscles</u> contract; and push/force the food along; 2 nd mark is linked to 1 st mark	2
	(b)	<ul style="list-style-type: none"> Washing-up liquid emulsifies the milk fat/ OWTTE; Increasing the <u>surface area</u> for the action of enzymes/ lipase; enzyme digests (milk) <u>fat</u> into <u>fatty acids</u> (and glycerol) which {<u>lower pH/ more acidic</u>}; 2 nd mark linked to 1 st mark, 3 rd mark is independent	3	
	Question 5 Total			[6]

Question		Marking details	Marks Available
6	(a)	Any 2 from: (James) Watson; (Francis) Crick; (Maurice) Wilkins; (Rosalind) Franklin Correct spelling for all names. If first name is attempted it must relate correctly to the second name.	2
	(b)	TAGACATGTC	1
	(c)	3	1
	Question 6 Total		[4]

Question		Marking details	Marks Available
7	(a)	Alien/exotic;	1
	(b)	Any two from: <ul style="list-style-type: none"> • All the types of food eaten/ effect on biodiversity or wildlife/ if it would become a pest itself/ make sure it does not eat non target species; • If it survives/ reproduces (in Wales); • If it carries disease/ parasites; • If it has predators; 	2
		Question 7 total	[3]

Question			Marking details	Marks Available												
8	(a) (b)	(i)	Stem (cells);	1												
				3												
			<table border="1"> <thead> <tr> <th>Function of cell division</th> <th>Part of cell which controls cell division</th> <th>Number of chromosomes in each cell</th> </tr> </thead> <tbody> <tr> <td>increases the number of cells; ✓</td> <td>cytoplasm</td> <td>twice as many as in the cells in Stage 1</td> </tr> <tr> <td>increases the size of each cell</td> <td>nucleus; ✓</td> <td>same number as in the cells in Stage 1; ✓</td> </tr> <tr> <td>keeps the number of cells the same</td> <td>cell membrane</td> <td>half as many as in the cells in Stage 1</td> </tr> </tbody> </table>	Function of cell division	Part of cell which controls cell division	Number of chromosomes in each cell	increases the number of cells; ✓	cytoplasm	twice as many as in the cells in Stage 1	increases the size of each cell	nucleus; ✓	same number as in the cells in Stage 1; ✓	keeps the number of cells the same	cell membrane	half as many as in the cells in Stage 1	
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(c)		Destruction of {embryonic cells/ embryos/ potential life} ;	1													
Question 8 total			[5]													

Question		Marking details	Marks Available
9	(a)	There is less lactic acid (in blood) (than A); There is a faster {removal/ break down} of {lactic acid/payback of oxygen debt}; NOT faster return to normal	2
	(b)	(i) 3:1;	1
		(ii) Should show some of each but more than 50% aerobic respiration; Accept alternative key if labels correct	1
	(c)	Glucose is completely broken down; Releases more energy/produces more ATP; NOT produces more energy	2
Question 9 Total			[6]

Question		Marking details	Marks Available
10	(a)	<ul style="list-style-type: none"> • Osmosis; • Movement of water into potato; • From where water is in high concentration to low concentration/ down concentration gradient; • Via semi permeable membrane; <i>3rd marking point linked to 2nd marking point</i>	4
	(b)	Water { <u>molecules/ particles</u> } {move faster at higher temperature/ have more energy};	1
	(c)	{Rate of/ volume} water passing in equals {Rate of/volume} of water passing out/no net {movement/flow} of water; NOT concentration of water is the same inside and outside the potato/dynamic equilibrium	1
		Question 10 Total	[6]

Question	Marking details	Marks Available
11	<p>Indicative content</p> <p>plants use chlorophyll to absorb light energy. convert carbon dioxide and water into glucose and oxygen glucose can be changed to starch and stored used to make cellulose/ proteins light, temperature and carbon dioxide are limiting factors</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> <p>Question 11 Total</p>	<p>6</p> <p>[6]</p>