

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	two species / types involved		1
b)	<p>any three from:</p> <p>pros (max two pros)</p> <ul style="list-style-type: none"> ☒ useful if species difficult to breed ☒ prevents extinction / continues genetic line <p>cons (max two cons)</p> <ul style="list-style-type: none"> ☒ low success rate or figures <p>given</p> <ul style="list-style-type: none"> ☒ development problems ☒ diverts attention from habitat conservation / poaching / pollution / climate change ☒ cloning reduces gene pool <p>conclusion</p> <p>argued conclusion</p>	<p>full marks only if at least one pro, one con and an attempt at a conclusion</p> <p>ignore reference to ethical issues / cruelty</p> <p>must include references to both pros and cons and must be at end of answer</p>	<p>3</p> <p>1</p>
Total marks			5

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	<pre> graph TD A[Remove egg cell from ovary] --> B[3] B --> C[The egg cell is now empty] C --> D[2] D --> E[The egg cell now has the nucleus of a body cell.] E --> F[1] F --> G[Ball of cells] G --> H[4] H --> I[Cloned animal] </pre>	<p>four correct gains 3 marks</p> <p>two or three correct gains 2 marks</p> <p>one correct gains 1 mark</p> <p>accept correct connection between statement and box</p>	3
Total marks			3

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS								
a)	<p>7(b) Marks awarded for this answer will be determined by the Quality of Written Communication (QWC) as well as the standard of the scientific response. Examiners should also refer to the information on page 2, and apply a 'best-fit' approach to the marking.</p> <table border="1"> <thead> <tr> <th>0 marks</th> <th>Level 1 (1–2 marks)</th> <th>Level 2 (3–4 marks)</th> <th>Level 3 (5–6 marks)</th> </tr> </thead> <tbody> <tr> <td>No relevant content</td> <td>There is simple description of the early stages of adult cell cloning. However there is little other detail and the description may be confused or inaccurate.</td> <td>There is an almost complete description of the early stages of the process and description of some aspects of the later stages. The description may show some confusion or inaccuracies.</td> <td>There is a clear, detailed and accurate description of all the major points of how adult cell cloning is carried out.</td> </tr> </tbody> </table>		0 marks	Level 1 (1–2 marks)	Level 2 (3–4 marks)	Level 3 (5–6 marks)	No relevant content	There is simple description of the early stages of adult cell cloning. However there is little other detail and the description may be confused or inaccurate.	There is an almost complete description of the early stages of the process and description of some aspects of the later stages. The description may show some confusion or inaccuracies.	There is a clear, detailed and accurate description of all the major points of how adult cell cloning is carried out.	6
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<p>Examples of Biology points made in the response could include: 6</p> <ul style="list-style-type: none"> • skin cell from zorse • (unfertilised) egg cell from horse • remove nucleus from egg cell • take nucleus from skin cell • put into (empty) egg cell • (then give) electric shock • (causes) egg cell divides / embryo formed • (then) place (embryo) in womb / uterus 											
Total marks			6								

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	joining sexual identical asexual clones		
Total marks			5

QUESTION 8

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	genetically identical / same DNA / same chromosomes	gains 2 marks accept identical without reference to genetic material for 1 mark	2
b)	remove nucleus from egg insert genetic material / nucleus / DNA / chromosomes from frozen mouse electric shock or allow to divide or insert into womb / uterus	allow use empty egg cell do not allow if reference to sperm	1 1 1
c)	ethical / religious / emotional reasons or not known if it is safe / long term effects not known	ignore playing God / unnatural / immoral	1
Total marks			6