

# Cloning

## Mark Scheme 2

<b>Level</b>	IGCSE(9-1)
<b>Subject</b>	Biology
<b>Exam Board</b>	Edexcel IGCSE
<b>Module</b>	Double Award (Paper 1B)
<b>Topic</b>	Use of Biological Resources
<b>Sub-Topic</b>	Cloning
<b>Booklet</b>	Mark Scheme 2

**Time Allowed:** 24 minutes

**Score:** /20

**Percentage:** /100

**Grade Boundaries:**

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

Question number	Answer	Notes	Marks
1	<u>nucleus</u> from body cell / <u>nucleus</u> from adult cell / <u>nucleus</u> from adult / eq; egg / ovum; remove nucleus (from egg) / enucleate (from egg); nucleus into (empty) <u>egg</u> cell; electricity; <u>mitosis</u> ; <u>embryo</u> ; uterus / womb; <u>surrogate</u> (mother);		Max 5
		<b>Total</b>	5

Question number	Answer	Notes	Marks
2	1. <u>nucleus</u> from (adult) sheep put into empty egg cell / enucleated egg cell / eq; 2. electricity; 3. mitosis / cell division; 4. embryo; 5. uterus / womb; 6. <u>surrogate</u> ;	Mp1 ignore DNA / gene / plasmid	max 5

Total 5 marks

Question number	Answer	Notes	Marks
3 (a)	1. select high milk yield cow/mother/cattle/ones/ male on basis of mother's or daughters milk yield / eq; 2. breed / reproduce / mate / eq; 3. use offspring with high milk yield; 4. repeat process / many generations / eq;	Allow two cows with high milk yield	3
(b) (i)	uterus / womb;		1
(ii)	1. identical / no variation / all have same characteristic / eq; 2. faster process / quicker process / eq; 3. more produced; 4. no need for mating / no need for two parents / no need to keep bull / no need to keep female /eq;	more that are identical = 2  ignore yield  ignore cost	3
(c)	genetically; identical;	same DNA = 2	2
(d)	mitosis;		1

(Total for Question = 10 marks)