AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Cloning Answers

Name:

M M E

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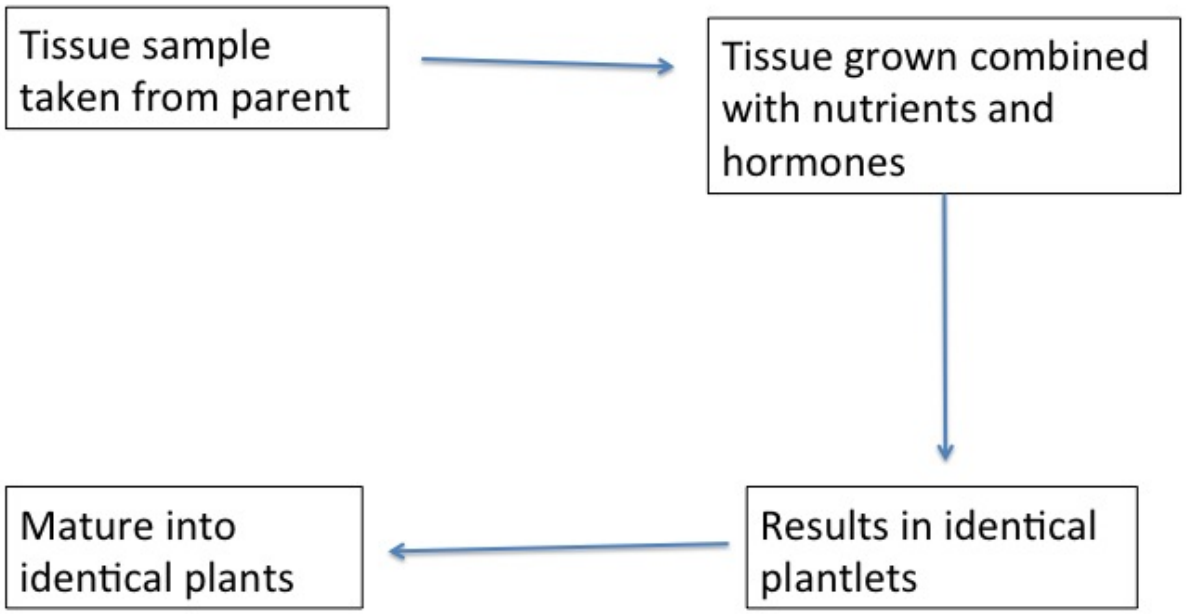
Total Marks: /24

Q1: Give a definition of cloning.

A= Production of identical offspring (1) by asexual reproduction (1)

(2 marks)

Q2: Draw a flow chart to show how a plant can be cloned using tissue culture.



(4 marks)

Q3: Explain how plant cloning using tissue culture is useful.

A= accept one of the following:

- Produce plants commercially
- Preserve rare species

(1 mark)

Q4: Cattle are now often bred using cloned embryos. Explain why this is useful.

A= 1 mark for each of the following:

- Allows better yield
- Better quality calf's

(2 marks)

Q5: Define asexual reproduction

A= 1 mark for each of the following:

- No fusion of gametes/ mixing of genetic material
- Involves only one individual to produce identical of spring

(2 marks)

Q6: Discuss how cattle embryos are cloned.

A= 1 mark for each of the following points:

- Early embryo is cluster of identical cell
- Divide embryos into separate cells
- Each cell grows to embryo
- Embryos transferred to host mothers
- Mothers prepared with hormones so ready for pregnancy
- Identical calves born

(6 marks)

Q7: Describe the process of adult cloning.

A= 1 mark for each of the following:

- Nucleus removed from unfertilised egg cell
- Nucleus removed from adult body cell
- Adult nucleus inserted into egg cell
- Given electric shock to trigger cell division
- Inserted into womb of adult once developed into a ball of cells

(5 marks)

Q8: Give 2 disadvantages of adult cloning.

A= 1 mark for each of the following:

- Ethics
- Reduce population variation if widely used

(2 marks)