

**AQA, OCR, Edexcel**

# GCSE Science

## GCSE Biology

Producing Monoclonal  
Antibodies Questions

Name:

**M M E**

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Total Marks: /23

Q1: What is a hybridoma?

A= Cells created during the production of monoclonal antibodies (1) by the fusion of antibodies (1) –specific lymphocytes and tumour cells.

(2 marks)

Q2: What are monoclonal antibodies?

A= proteins (1) that target specific cells (1).

(2 marks)

Q3: How are large-scale productions of hybridomas carried out?

A= (1) cellular division

Accept one of the following:

- Collected
- Purified

(2 marks)

Q4: What is a clone?

A= Genetically identical cell copy

(1 mark)

Q5: Explain how an antibody is bound to the surface of a cell.

A= 1 mark for each of the following points:

- Cell has surface antigens
- Complementary shape to antibody
- Antibody binds to antigen binding site

(3 marks)

Q6: Explain what an ELISA is used for.

A= Detect disease

(1 mark)

Q7: Other than diagnosing a pregnancy, give 3 ways monoclonal antibodies can be used.

A= Accept any 3 of the following:

- Diagnose disease
- Treat disease
- Monitoring/ Measuring
- Research

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(3 marks)

Q8: Explain why combining human and mouse cells is beneficial when producing monoclonal antibodies.

A= Reduces the risk of rejection by the body.

(1 mark)

Q9: Explain how monoclonal antibodies are used to diagnose pregnancy.

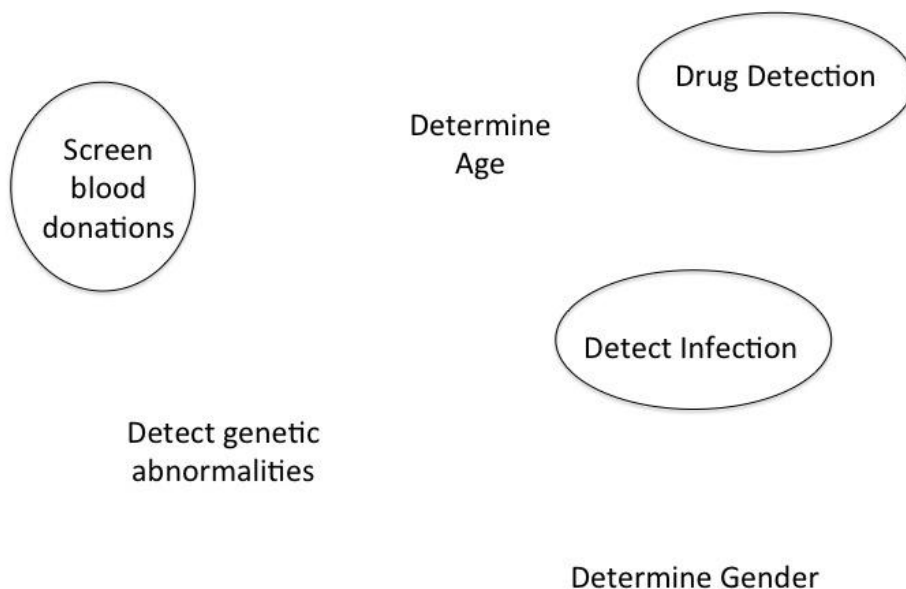
A= Accept any 5 of the following:

- Bind to HCG (pregnancy hormone)
- Can give a result low levels
- Hormone present in urine
- Causes a colour change on test
- Fast results
- Easy to use

(5 marks)

Q10: Circle the possible ways monoclonal antibodies can be used to measure or detect.

A= 1 mark for each correct circle.



(3 marks)