

# Interactive Example Candidate Responses

## Paper 2 (May/June 2016), Question 1

### Cambridge International AS & A Level Biology 9700

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Answer all the questions.

1 Statements A to E are about the structure and functioning of enzymes.

State the correct term to match each of the statements A to E.

- A The energy level, lowered by enzyme action, that needs to be overcome by reactants in order for products to be formed.

.....Activation Energy.....

- B The mechanism of enzyme action that relies on the active site being partially flexible and changing shape in order to bind the substrate.

.....Induced fit mechanism.....

- C The term to describe a protein, such as an enzyme, with a tertiary or quaternary structure that results in an approximately spherical shape.

.....Globular.....

- D The term for enzymes that function outside cells.

.....Extracellular.....

- E The concentration of substrate that enables an enzyme to achieve half the maximum rate of reaction.

.....K<sub>m</sub> value.....

[5]

[Total: 5]

Select  
page

Your  
Mark

1(A)

1(B)

1(C)

1(D)

1(E)

Q1	Mark scheme	
(a)A	A activation energy / energy of activation ;	[1]
(a)B	induced fit ; A induced fit, model / hypothesis / theory / mechanism	[1]
(a)C	globular ;	[1]
(a)D	extracellular ;	[1]
(a)E	E Michaelis-Menten constant ; A K <sub>m</sub>	[1]
		[Total: 5]

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Activation Energy.

- B** The mechanism of enzyme action that relies on the active site being partially flexible and changing shape in order to bind the substrate.

Induce fit mechanism.

- C** The term to describe a protein, such as an enzyme, with a tertiary or quaternary structure that results in an approximately spherical shape.

Globular

- D** The term for enzymes that function outside cells.

extrinsic protein ~~exocytosis~~

- E** The concentration of substrate that enables an enzyme to achieve half the maximum rate of reaction.

enzyme inhibition

[5]

[Total: 5]

Select  
page

Your  
Mark

1(A)

1(B)

1(C)

1(D)

1(E)

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- B The mechanism of enzyme action that relies on the active site being partially flexible and changing shape in order to bind the substrate.

Induced fit

- C The term to describe a protein, such as an enzyme, with a tertiary or quaternary structure that results in an approximately spherical shape.

hemoglobin

- D The term for enzymes that function outside cells.

Active site

- E The concentration of substrate that enables an enzyme to achieve half the maximum rate of reaction.

$\frac{1}{2} K_m$  (Michaelis-Menten)

[5]

[Total: 5]

Select  
page

Your  
Mark

1(A)

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Cambridge Assessment International Education  
The Triangle Building, Shaftesbury Road, Cambridge, CB2 8EA, United Kingdom  
t: +44 1223 553554 f: +44 1223 553558  
e: [info@cambridgeinternational.org](mailto:info@cambridgeinternational.org) [www.cambridgeinternational.org](http://www.cambridgeinternational.org)

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