

Questions

Q1.

Answer the question with a cross in the box you think is correct . If you change your mind about an answer, put a line through the box and then mark your new answer with a cross .

Birds are classified in the domain Eukarya.

(i) Why are the cells from birds described as eukaryotic?

(1)

- A** they have membrane-bound organelles
- B** they do not have nuclei
- C** they have a rigid cell wall
- D** they have a cell membrane

(ii) Give **one** reason why the three domain classification system was proposed.

(1)

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.....

.....

(Total for question = 2 marks)

Q2.

Organisms can be classified by the five kingdom or three domain method.

(i) What is the name of the domain that plants belong to?

(1)

- A** Eukarya
- B** Archaea
- C** Monera
- D** Protista

(ii) Plant cells contain chloroplasts.

What happens in a chloroplast?

(1)

<input type="checkbox"/> A	oxygen produced	sunlight absorbed by chlorophyll
<input type="checkbox"/> B	carbon dioxide produced	sunlight absorbed by mitochondria
<input type="checkbox"/> C	oxygen produced	sunlight absorbed by mitochondria
<input type="checkbox"/> D	carbon dioxide produced	sunlight absorbed by chlorophyll

(iii) Give a reason why the three domain method of classification has been suggested.

(1)

.....
.....

(Total for question = 3 marks)

Mark Scheme

Q1.

Question number	Answer	Mark	
(i)	<p>A they have membrane-bound organelles</p> <p>The only correct answer is A</p> <p><i>B is not correct because they have a nucleus</i></p> <p><i>C is not correct because they do not have a cell wall</i></p> <p><i>D is not correct because this is not a specific feature of eukaryotic cells</i></p>	(1) AO1 1	
Question number	Answer	Additional guidance	Mark
(ii)	genetic analysis / based on {DNA/genetics} / DNA of Archaea more similar to eukaryotes (1)	accept more knowledge because of better microscopes	(1) AO1 1

Q2.

Question number	Answer	Mark
(i)	<p>A Eukarya</p> <p>i. The only correct answer is A</p> <p><i>B is not correct because plants are not single celled prokaryotic organisms</i></p> <p><i>C is not correct because plants are not single celled prokaryotic organisms and Monera is a kingdom</i></p> <p><i>D is not correct because Protista is a kingdom and not a domain</i></p>	(1) comp AO1 (1) 4.7, 1.1

Question number	Answer	Mark
(ii)	<p>A oxygen produced sunlight absorbed by chlorophyll</p> <p>ii. The only correct answer is A</p> <p><i>B is not correct because photosynthesis doesn't produce carbon dioxide and sunlight is not absorbed by mitochondria</i></p> <p><i>C is not correct because sunlight is absorbed by chlorophyll not mitochondria</i></p> <p><i>D is not correct because photosynthesis doesn't produce carbon dioxide it produces oxygen</i></p>	<p>(1)</p> <p>AO1 (1)</p>

Question number	Answer	Mark
(iii)	<p>Any one from:</p> <ul style="list-style-type: none"> • (improved) genetic analysis (1) • DNA/RNA {screening/sequencing} (1) • domain theory is based on genetics (1) • differences between coding and non-coding DNA (1) 	<p>(1)</p> <p>AO1 (1)</p>