# IGCSE DA Biology 4437 1F Mark Scheme (Results) Summer 2008 

## IGCSE

## IGCSE DA Biology 4437 1F

## 4437-1F MARK SCHEME

## Key

; indicates separate mark points
/ indicates alternatives
eq allow for correct equivalent
_- word underlined means no alternatives allowed

| Question |  | Correct Answer | Acceptable <br> Number | Reject |
| :--- | :--- | :--- | :--- | :--- |
| Answers |  |  |  |  | Mark

(Total 7 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathbf{2 ( a )}$ | A | Cornea; |  |  | 1 |
|  |  | B | lens; |  |  |
|  | C | iris; |  |  |  |
|  | D | retina; |  |  | 1 |
|  |  |  |  |  |  |
|  |  |  |  |  | 1 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{2 ~ ( b ) ( i ) ~}$ | C / iris; |  |  | 1 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| 2 (b)(ii) | D / retina; |  |  | 1 |

(Total 6 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{3}$ (a) | three boxes, one on top of the <br> other, getting smaller nearer the <br> top; <br> boxes labelled in correct order; |  |  | 1 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{3}$ (b)(i) | Decrease / die; |  |  | $\mathbf{1}^{(\mathbf{1})}$ |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{3}$ (b)(ii) | less food (for the big fish); |  |  | $\mathbf{1}^{\text {(1) }}$ |

(Total 4 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| 4 (a) | line to trachea (below larnyx); |  |  | 1 |
| Accept T |  |  |  |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| 4 (b) | cartilage; <br> ribs; <br> alveoli / air sacs / lungs; |  | 1 |  |
| 1 |  |  |  |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject |  |  |
| :--- | :--- | :--- | :--- | :---: | :---: |
| 4 (c) | muscle; <br> contract; <br> flattens / moves down / eq; <br> volume (of thorax) increases; <br> pressure (inside the thorax) <br> decreases; |  |  |  |  |

(Total 7 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{5}$ (a) | beaker B; |  |  | $1 \quad$ (1) |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{5}$ (b) | C; |  |  | 1 |
| less gas / less photosynthesis / <br> slower enzyme activity / eq; |  |  | 1 |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{5}$ (c) | type of plant / species of plant / <br> eq; <br> size / mass / amount / surface area <br> of plant / eq; <br> type of water; <br> pH of water / eq; <br> CO2 in water / eq; <br> amount of chlorophyll / eq; <br> time; |  |  | Max 2 |

(Total 5 marks)

| Question Number | Correct Answer |  | Acceptable Answers | Reject | Mark |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 6 (a)(i) |  |  |  |  | (3) |
|  | Description of step | Order of step |  |  |  |
|  | Snuppy born | $6^{\text {th }}$ |  |  |  |
|  | Egg cell enucleated (emptied) | $2^{\text {nd }}$; |  |  |  |
|  | Embryo grows | $\left(4^{\text {tin) }}\right.$ |  |  |  |
|  | Nucleus from fathers skin cell put into empty egg cell | $3^{\text {rd }}$; |  |  |  |
|  | Egg cell obtained | $\left(1^{\text {st }}\right.$ ) |  |  |  |
|  | Embryo placed into uterus of surrogate mother | $5^{\text {th }}$; |  |  |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{6}$ (a)(ii) | ovary ; |  |  | (1) |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| 6 (a)(iii) | no nucleus / eq ; |  |  | (1) |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{6}$ (b) | genetically / eq ; <br> identical ; |  |  |  |


| Question Number | Correct Answer |  | Acceptable Answers | Reject | Mark |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 6 (c) |  |  |  |  | (2) |
|  | Animal | Sex chromosomes |  |  |  |
|  | Snuppys father | (XY) |  |  |  |
|  | The surogate mother | XX; |  |  |  |
|  | snuppy | XY; |  |  |  |

(Total 9 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{7 ~ ( a )}$ | access / transport / travel / <br> communication / trees for a purpose <br> / construction / manufacture / <br> logging / eq / trees for fuel <br> farming / mining; |  |  |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Rej ect | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{7 ( b )}$ | loss of habitat / food; <br> loss of numbers / death / extinction <br> / loss of genes / migration / loss of <br> species / eq; <br> less photosynthesis; <br> global warming / greenhouse effect / <br> ref to CO2 in air; <br> soil erosion idea / leaching; <br> flooding / eutrophication / <br> desertification / lack of minerals / <br> eq; <br> less transpiration; <br> less rainfall; | Max 4 |  |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8 ~ ( a ) ( \mathbf { i ) ~ }}$ | anther / stamen / pollen sac; |  |  | $1 \quad$ (1) |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8}$ (a)(ii) | drawn to anther only (not to <br> filament); |  |  | 1 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8 ~ ( a ) ( i i i ) ~}$ | pollen; <br> from $\underline{\text { anther/ }}$ P to stigma; |  | 2 |  |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8 ( b )}$ | light / gravity; | sun / <br> sunlight; | phototropism <br> / geotropism | $1 \quad$ (1) |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{8 ~ ( c ) ( i ) ~}$ | carbon dioxide + water; (or <br> opposite) <br> glucose + oxygen; (or opposite) <br> Ignore light / chlorophyll | chemical <br> symbols; ; |  | 2 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | ---: |
| $\mathbf{8 ~ ( c ) ( i i ) ~}$ | thin; <br> large surface area; <br> stomata; <br> air spaces / spongy (mesophyll); | pores / <br> guard <br> cells | Max 2 |  |

(Total 9 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Rej ect | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{9}$ | mouth / saliva; <br> mechanical digestion / chewing / <br> mastication / eq; <br> amylase; ONCE Ignore carbohydrase <br> (starch to) maltose; <br> pancreas / pancreatic juice / eq; <br> small intestine / duodenum / ileum; <br> starch/ maltose to glucose; <br> maltase; |  | Max 6 |  |

(Total 6 marks)

| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 0}$ | vena cava; <br> atrium / auricle; <br> lung; <br> valves; <br> aorta; <br> hepatic; <br> glucose / sugar; <br> glycogen; |  | 8 |  |

(Total 8 marks)


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 2 ( a )}$ | $3.6 / 5.4 \times 100=66.7 ;$ Accept <br> $66.67 / 66.6666 \mathrm{etc}$ <br> one for 3.6 | 66 and two <br> thirds; |  | 2 |


| Question <br> Number | Correct Answer | Acceptable <br> Answers | Reject | Mark |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 2 ~ ( b ) ~}$ | all / extra / increase / more <br> mineral ions / more named mineral <br> / correct amount / eq; <br> use or purpose; | nutrients |  | 2 |

