Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

BIOLOGY **0610/32**

Paper 3 Theory (Core) **May/June 2019**

MARK SCHEME

Maximum Mark: 80

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2019 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This syllabus is regulated for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

© UCLES 2019

PUBLISHED

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

© UCLES 2019

GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however**;** the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

© UCLES 2019

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>1(a)</td><td>
<table>
<tr><td>structure</td><td>function</td></tr>
<tr><td>anus ;</td><td>where egestion occurs</td></tr>
<tr><td>gall bladder</td><td>stores bile ;</td></tr>
<tr><td>mouth ;</td><td>where ingestion occurs</td></tr>
<tr><td>salivary glands</td><td>produce / secrete, saliva / amylase ;</td></tr>
<tr><td><u>small</u> intestine ;</td><td>where most absorption occurs</td></tr>
</table>
</td><td>5</td><td></td></tr>
<tr><td>1(b)</td><td>fatty acids ;
glycerol ;</td><td>2</td><td></td></tr>
<tr><td>1(c)</td><td>C H O ;
N ;</td><td>2</td><td></td></tr>
</table>

© UCLES 2019

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>2(a)</td><td>(a disease in which the) pathogen ;
can be passed from one host to another ;</td><td>2</td><td></td></tr>
<tr><td>2(b)</td><td>boil ;
chlorinate ;
UV treatment ;
sterilising, solution / tablets ;
AVP ;</td><td>2</td><td></td></tr>
<tr><td>2(c)(i)</td><td>10 (%) ;;</td><td>2</td><td></td></tr>
<tr><td>2(c)(ii)</td><td>bacterium / bacteria ;</td><td>1</td><td></td></tr>
<tr><td>2(d)(i)</td><td>(loss of) watery faeces / AW ;</td><td>1</td><td></td></tr>
<tr><td>2(d)(ii)</td><td><u>oral rehydration</u> therapy ;
intake of water containing, salt / ions, and sugar ;
AVP ;;</td><td>2</td><td></td></tr>
<tr><td>2(e)</td><td>genetic ;
rapid ;
complex ;</td><td>3</td><td></td></tr>
<tr><td>3(a)</td><td>xylem labelled ;
phloem labelled ;
root hair labelled ;</td><td>3</td><td></td></tr>
<tr><td>3(b)</td><td><table><tr><th>tissue</th><th>organ</th><th>organ system</th></tr><tr><td>fat (under the skin) ;</td><td>kidney ;
heart ;
lung ;</td><td>(nervous system)</td></tr></table></td><td>4</td><td></td></tr>
</table>

Question	Answer	Marks	Guidance
3(c)	(smallest) chloroplast **;** palisade cell (then) phloem tissue (then) root **;** (largest) whole plant **;**	**3**	

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>4(a)</td><td>
<table>
<tr><th>name of part</th><th>letter in Fig. 4.1</th><th>function</th></tr>
<tr><td>amniotic sac</td><td>E ;</td><td>contains amniotic fluid</td></tr>
<tr><td>cervix ;</td><td>D ;</td><td>dilates during birth</td></tr>
<tr><td>umbilical cord ;</td><td>F ;</td><td>carries materials between mother and fetus</td></tr>
</table>
</td><td>5</td><td></td></tr>
<tr><td>4(b)</td><td>zygote ;
grows / divides ;
reference to mitosis ;
forms a ball of cells ;
becomes an embryo ;</td><td>3</td><td></td></tr>
<tr><td>4(c)</td><td>early stage increases in complexity ;
late stages increases in size ;</td><td>2</td><td></td></tr>
</table>

© UCLES 2019

Question	Answer	Marks	Guidance
5(a)	movement ; respiration ; sensitivity ; growth ; nutrition ; excretion ;	**2**	
5(b)	nerve (cell) ; ciliated (cell) ; root hair (cell) ; red blood (cell) ; xylem (cell) ; phloem (cell) ; palisade (mesophyll cell) ; spongy (mesophyll cell) ; white blood (cell) ; AVP ;	**2**	

© UCLES 2019

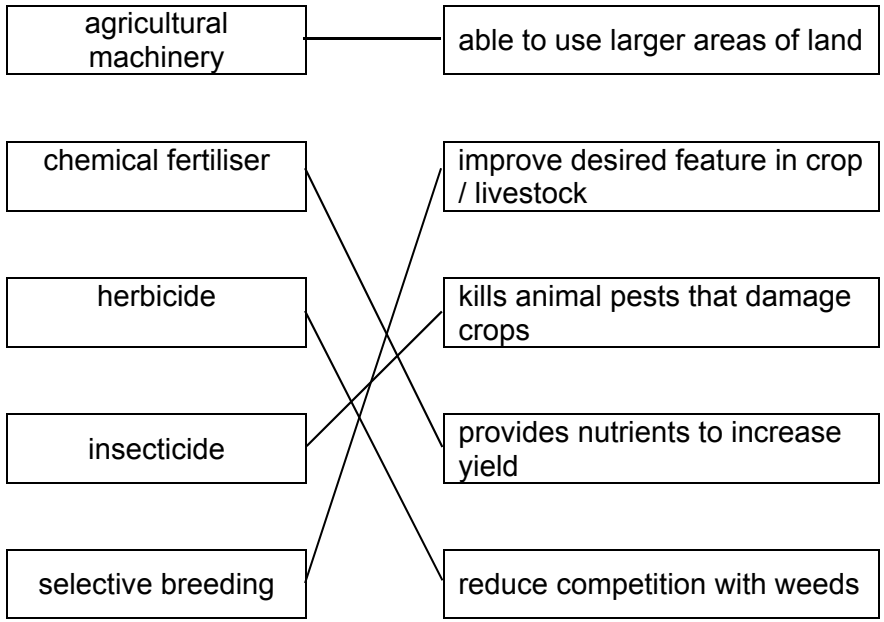
Question	Answer	Marks	Guidance
5(c)	Sexual reproduction always involves only one parent. involves gametes. includes the process of fertilisation. only occurs in animals. only produces genetically identical offspring. results in the formation of a zygote.	**3**	one mark for each correct line
5(d)	**A ;** **C ;** involves only one <u>parent</u> / does not involve two <u>parents</u> **;**	**3**	

Question	Answer	Marks	Guidance
6(a)	population is constant then increases ; change occurs at 1700 ; rapid / exponential, increase (from 1800) ; data quote ;	**3**	
6(b)	increased food production ; increased medical, facilities / care ; better, sanitation / clean water / sewage facilities ; increased hygiene ; increased (health) education ;	**3**	
6(c)	disease ; war ; (named) natural disaster ; famine ; migration ; AVP ;	**2**	

© UCLES 2019

Question	Answer	Marks	Guidance
7(a)(i)	**A** (upper) epidermis **;** **B** spongy mesophyll (layer) **;**	**2**	
7(a)(ii)	vascular bundle circled on Fig.7.1 **;**	**1**	
7(a)(iii)	arrow drawn to end on an air space in spongy mesophyll tissue on Fig. 7.1 **;**	**1**	
7(b)	cell membrane **;** cytoplasm **;** nucleus **;** AVP **;**	**3**	

© UCLES 2019

Question	Answer	Marks	Guidance
8(a)		**4**	5 correct = 4 marks 3 or 4 correct = 3 marks 2 correct = 2 marks 1 correct = 1 mark
8(b)	loss of biodiversity **;** reduction in genetic variation **;** production of, (named) greenhouse gases / global warming **;** water pollution / AW **;** habitat destruction **;**	**2**	

Question	Answer	Marks	Guidance
9(a)(i)	(potato cylinder in test-tube 1) increased in mass (by 5g) ; (potato cylinder in test-tube 2) mass stayed the same ;	**2**	
9(a)(ii)	6 (g) ;	**1**	
9(a)(iii)	water moves out of the potato (cylinder) ; by osmosis ; because there is more water inside the potato than in the solution / AW ;	**2**	
9(b)	nitrate ; for making amino acids / proteins ; OR magnesium ; for making chlorophyll ;	**2**	

© UCLES 2019