

#### **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**

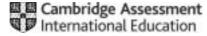
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began,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

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



#### **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.

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#### **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.

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Question	Answer		Marks	Guidance	
1(a)	structure	function	5		
	anus;	where egestion occurs			
	gall bladder	stores bile ;			
	mouth;	where ingestion occurs			
	salivary glands	produce / secrete, saliva / amylase ;			
	small intestine;	where most absorption occurs			
1(b)	fatty acids ; glycerol ;		2		
1(c)	CHO; N;		2		

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

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

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

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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	

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Question	Answer	Marks	Guidance
5(c)	always involves	only one parent.	one mark for each correct line
	involves gamete	S.	
	Sexual	cess of fertilisation.	
	reproduction only occurs in ar	nimals.	
	only produces go offspring.	enetically identical	
	results in the form	mation of a zygote.	
5(d)	A; C; involves only one parent / does not involve two	parents;	

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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	

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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	

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Question	Answer	Marks	Guidance
8(a)	agricultural able to use larger areas of land	4	5 correct = 4 marks 3 or 4 correct = 3 marks 2 correct = 2 marks 1 correct = 1 mark
	chemical fertiliser improve desired feature in crop / livestock		
	herbicide kills animal pests that damage crops		
	insecticide provides nutrients to increase yield		
	selective breeding reduce competition with weeds		
8(b)	loss of biodiversity; reduction in genetic variation; production of, (named) greenhouse gases / global warming; water pollution / AW; habitat destruction;	2	

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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	

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