Centre No.					Pape	r Refer	ence			Surname	Initial(s)
Candidate			5	0	2	9	/	0	1	Signature	

Paper Reference(s)

# 5029/01

# **Edexcel GCSE Biology**

B3 – Topics 1 and 2

Thursday 19 May 2011 – Afternoon

Time: 1 hour

Materials required for examination	Items incl		
Nil	Nil		

Items	included	with	question	papers
3 T'1				

Team L	eader's u	ise only

Question

Leave

Examiner's use only

2	
3	
4	
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6	
7	

8

9

10

11

12

13

14

#### **Instructions to Candidates**

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.

Check that you have the correct question paper.

Answer ALL the questions. Write your answers in the spaces provided in this question paper.

Do not use pencil. Use blue or black ink.

Show all stages in any calculations and state the units. Calculators may be used.

Include diagrams in your answers where these are helpful.

### **Information for Candidates**

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). There are 14 questions in this question paper. The total mark for this paper is 60. There are 20 pages in this question paper. Any blank pages are indicated.

## Advice to Candidates

You are reminded of the importance of clear English and careful presentation in your answers.

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Turn over

Total

1. The photographs show a bear and a moose.





bear moose

(a)	Suggest	two	features	shown	in	the	photograph	which	show	that	the	bear	is	a
	carnivor	e.												

(b) Moose are herbivores.

Suggest **two** ways the moose may be adapted to avoid being eaten by predators.

1 ......

2.....(2)

(Total 4 marks)

Q1

2.









Use the words in the box to complete the sentences.

colourhand gesturessoundbody posturepheromonesfacial expressionlanguage

The moth attracts a mate from a long distance using
The human seen in the picture is using and
to communicate anger.
The gorilla can be seen in the picture to be using to communicate with other gorillas.
The cat is using to make itself look bigger to scare off a predator.

Q2

(Total 4 marks)

Leave blank

3. People with a body mass index (BMI) of over 30 are said to be obese.



Gustoimages / Science Photo Library

Suggest two possible health risks of being obese	Suggest t	wo possible	health risks	of being obese.
--	-----------	-------------	--------------	-----------------

1	
ı	
•	

2	

.... Q3

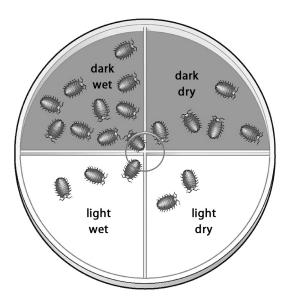
(Total 2 marks)

Leave blank Draw one straight line from each drug to the plant from which it can be extracted. drug plant from which it can be extracted Pacific Yew tree artemisinin Cinchona tree taxol Chinese plant Artemisia annua quinine bark of the willow tree aspirin seaweed Q4 (Total 4 marks)

Q5

(Total 5 marks)

5. Choice chambers can be used to study the behaviour of woodlice.



(a) Twenty woodlice were put into the choice chamber through the hole in the top. They were then left for several minutes.

	Describe the behaviour shown by these woodlice.	
		••••
		(2)
(b)	Name <b>two</b> stimuli that the woodlice are responding to.	
	1	
	2	
		(2)
(c)	Name the type of behaviour shown by the woodlice in this investigation.	
		(1)

**6.** Some margarine-type spreads may have health benefits.



(a) They contain an ingredient that is said to reduce the absorption of cholesterol.

(i) Name this ingredient.

(1)

(ii) Explain how reducing the absorption of cholesterol has health benefits.

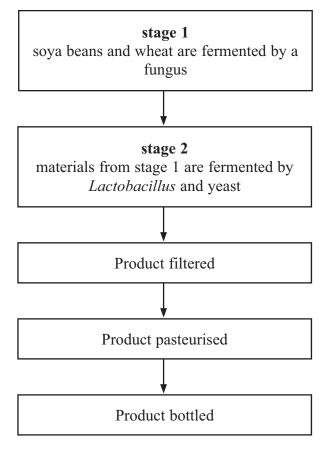

**(2)** 

**Q6** 

(Total 3 marks)



7. The diagram shows the two fermentation stages in the production of soy sauce.



(a) Name the fungus (mould) used in	stage 1.	
-------------------------------------	----------	--

(1)

(b) What type of microorganism is Lactobacillus?

(1)

(c) What effect will Lactobacillus have on the fungus used in stage 1?

.....

(1)

(d) State why soy sauce is pasteurised.

(Total 4 marks)

**(1)** 

**Q**7

**8.** The photograph shows a peacock displaying his tail feathers.



(a)	Suggest one reason why the peacock is displaying his tail feathers.	
	(1)	
(b)	Suggest how this type of behaviour increases the chances of survival of a species.	
	(3)	Q8
	(Total 4 marks)	

**9.** Wolves are wild dogs that hunt in packs.



(a)	State two ways that hunting in packs helps wolves to survive.
	1
	2
	(2)
	(-)
(b)	It is thought that, about twenty thousand years ago, the first domesticated animals were dogs.
	Suggest <b>two</b> ways that dogs helped humans to survive.
	1
	2
	(2)
	(Z)



(c) The table shows the percentage of animals eaten by humans in one area of Europe from 11000 to 5000 years ago.

time from present day (years ago)	domesticated cattle and pigs (%)	domesticated sheep and goats (%)	wild cattle and pigs (%)	wild deer (%)
11 000	27	0	45	28
9 000	37	26	22	15
7 000	31	28	10	31
5 000	56	36	3	5

(i)	Describe the overall trend for domesticated animals shown in the table.	
	(1)	
(ii)	Suggest why the percentage of deer eaten increased between 9000 and 7000 years ago.	
	(1)	<b>Q9</b>
	(Total 6 marks)	

10.	The first stage in making yoghurt is adding a starter culture of microorganisms to milk.	Leave blank
	(a) Name the microorganisms that are used in the starter culture.	
	(1)	
	(b) Describe how these microorganisms change the milk into yoghurt.	
	(3)	
	(c) Explain why prebiotics are added to some yoghurts.	
	(2)	Q10
	(Total 6 marks)	

Leave
blank

11.	Complete the table by stating what each term means.
	Give one example of each.

	term	what it means	example
(a)	conditioned behaviour		
(b)	habituation		
(c)	anthropomorphism		

Q11

(Total 6 marks)

12. Loggerhead and green turtles are marine turtles. They are hunted by tiger sharks.





**loggerhead turtle**Porterfield Chickering / Science Photo Library

**green turtles**Georgette Douwma / Science Photo Library

Tiger sharks hunt turtles by swimming very fast (30 km/hr), attacking from below and biting through their shells.

The table shows some facts about loggerhead and green turtles.

species	colour	time spent at surface breathing (s)	relative shell strength	speed (km/hr)	ability to withdraw into shell
loggerhead turtles	brown on top, white underneath	56	stronger	20	no
green turtles	brown and green on top, white underneath	2	weaker	22	no

(a)	Use the information in the table to suggest the most likely reason why tiger sharks attack ten times as many loggerhead turtles compared to green turtles.			
	(1)	)		



(b) Green turtles lay eggs in the sand on beaches.

The young turtles hatch out, walk to the sea and then swim away to return years later to lay their own eggs.

The table shows some details of the reproductive strategies of four species.

species	number of eggs time spent with you after hatching (day	
green turtles (reptile)	100 – 120	none
crocodiles (reptile)	30 – 60	3
great tit (bird)	10 – 12	26
robin (bird)	5 – 6	35

Explain how the time spent with the young after hatching affects the different number of eggs laid.	
(2)	<b>Q12</b>

(Total 3 marks)

13.



(a)	(i)	Name the type of behaviour being shown in the picture.
		(1)
	(ii)	Explain how this type of behaviour can help the duckling survive.

Q13

**(3)** 

(Total 4 marks)



(Total 5 marks)

**TOTAL FOR PAPER: 60 MARKS** 

**END** 

Describe how each of these bacteria are used to modify plants to increase crop yield.

yields in different ways.



