Centre No.				Pape	er Refer	ence			Surname	Initial(s)
Candidate No.		7	0	4	2	/	0	2	Signature	

7042/02

London Examinations GCE

Human Biology Ordinary Level

Paper 2

Friday 15 May 2009 – Morning

Time: 2 hours

Materials	required f	or	examinatior
7.11			

Items included with question papers

Instructions to Candidates

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

Answer FIVE questions, THREE from Section A and TWO from Section B.

Indicate which question you are answering by marking the box (X). If you change your mind, put a line through the box (\boxtimes) and then indicate your new question with a cross (\boxtimes) .

Write your answers in the spaces provided in this question paper.

Information for Candidates

The total mark for this paper is 100. All questions carry equal marks. Marks for parts of questions are shown in round brackets: e.g. (2).

This paper has 9 questions.

Any blank pages are indicated.

Advice to Candidates

Write your answers neatly and in good English.

Draw labelled diagrams where these will make the answers clearer. Facts explained in a labelled diagram need not be repeated in the written answer.

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Examiner's use only

Team Leader's use only

1

3 4

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Turn over

SECTION A

Answer any THREE questions in this section.

If you answer Question 1, put a cross in this box \square .

1.	Fats	s are an essential part of the human diet.
	(a)	Describe how you would test a sample of dried food to find out if it contained fat.
		(4)

	(5)
(ii)	
(ii)	(5)
(ii)	(5)
(ii)	(5)
(ii)	Where and how do the products of fat digestion enter the blood stream?
(ii)	Where and how do the products of fat digestion enter the blood stream?
(ii)	Where and how do the products of fat digestion enter the blood stream?
(ii)	Where and how do the products of fat digestion enter the blood stream?
(ii)	Where and how do the products of fat digestion enter the blood stream?
(ii)	Where and how do the products of fat digestion enter the blood stream?

Suggest why, if they continue with a very low fat diet for a long time, they may find it becomes difficult to control their body temperature in a cold environment.
(4)
Describe and explain two ways, other than temperature control, in which fat is used in the body.
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		If you answer Question 2, put a cross in this box \square .	
2.	The hea	art is used to circulate the blood in the human body.	
	(a) (i)	A deoxygenated red blood cell that enters one side of the heart eventually leaves the other side of the heart as an oxygenated red blood cell.	
		Describe the structure of the heart and explain how it functions to bring this about.	



(7)

	(3)
and left atria. This allo	orn with a small hole in the heart wall between the right was blood to pass from one side of the heart to the other. The way the child may be affected later in life if this hole does not be a side of the heart to the other.
and left atria. This allo Suggest and explain ho	ws blood to pass from one side of the heart to the other.
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	skeletal muscle.
	(3)
c)	Describe how a person's diet can help maintain a healthy heart.
رد)	Describe now a person's diet can help maintain a hearthy heart.
	(3)
	(Total 20 marks)
	(10ttil 20 mili No)

(8)

If you answer Question 3, put a cross in this box \square .

3. Proteins are major components of all living cells. As a cell grows, more proteins have to

be forn	ned.
(a) (i)	Describe the process of protein synthesis, including the roles of the nucleus, the ribosomes and the endoplasmic reticulum.

(11)	Explain how some proteins control the metabolic activity of the cell.
	(2)
n) Δς	growth continues, cells may divide by mitosis.
(1)	Explain why mitochondria are important both for protein formation and for mitosis to occur.
	(3)

If you answer Question 4, put a cross in this box $\ oxdiv$.

- **4.** The female reproductive system ensures the production of ova and the correct conditions for the development of an embryo.
 - (a) Draw a large, fully labelled diagram to show the structure of the female reproductive system.

(6)



11

(1)	During the menstrual (oestrous) cycle.
	(7)
(ii)	During pregnancy.

(6)	Explain the importance of breast feeding to a young baby.	Leave blank
	explain the importance of oreast feeding to a young baby.	
	(4)	Q4
	(Total 20 marks)	

If you answer Question 5, put a cross in this box \square .

Describe the structure of the thorax and explain how air is made to pass into the lungs.

(i)	How is this change in the rate of breathing brought about?
(ii)	Explain why this change in rate is important.
(ii)	
(ii)	(4)
(ii)	Explain why this change in rate is important.
(ii)	Explain why this change in rate is important.
(ii)	Explain why this change in rate is important.
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Explain the effect that anaerobic respiration has on the	e body.
TOTAL FO	
TOTAL FO	(4)
TOTAL FO	(Total 20 marks)
	OR SECTION A: 60 MARKS

SECTION B

Leave blank

Answer any TWO questions in this section.

If you answer Question 6, put a cross in this box $\ oxdiv$.

6. Many bacteria are pathogenic to humans.

(a)	(i)	Draw a large	labelled diagra	m to show	the structure	of a typical	Lhacterium
l	aj	(1)	Diaw a large,	iauciicu uiagia	iiii to siiow	me shucture	or a typical	Dacterrum

		(5)
(ii)	Describe how bacteria obtain the nutrients that they need.	
		 (3)

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	berculosis is a disease caused by a bacterium. This disease spreads easily in ercrowded and unhygienic conditions.
(i)	Describe how tuberculosis is normally transmitted from person to person.
	(2)
(ii)	Describe how a person found to have contracted tuberculosis should be treated and explain why early detection of the disease is important for the patient.
(ii)	

(c)	
	Suggest some of the reasons for this fall.
(d)	In some countries there has recently been a rise in the number of new cases of tuberculosis. Suggest reasons for this rise.
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(8)

If you answer Question 7, put a cross in this box \square .

- 7. The skin forms a barrier between the living cells of the body and the surrounding environment.
 - (a) (i) With the help of a labelled diagram, describe the function of each of the structures forming the skin of a human.

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o) (i)	Explain how the lining of the trachea and of the bronchi provides defence against the entry of pathogens.
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		05
		Q7
	smoke.	

Many n	nicroorganisms have an important role in the human environment.
(a) (i)	Describe the role of microorganisms in the decomposition of organic matter.
	(4)
(ii)	Describe and explain the conditions in which decomposition occurs mos readily.
(ii)	Describe and explain the conditions in which decomposition occurs mos readily.
(ii)	Describe and explain the conditions in which decomposition occurs mos readily.
(ii)	Describe and explain the conditions in which decomposition occurs mos readily.
(ii)	Describe and explain the conditions in which decomposition occurs mos readily.

•••••
(3)

Describe three methods	, based on different pri	nciples, by which foo	d can be stored.
			(9)
		(T	
		()	Total 20 marks)

(8)

If you answer Question 9, put a cross in this box \square .

9.	Atmo dioxi		heric air is a mixture of gases and usually contains about 0.035% carbon
	(a) ((i)	Explain why carbon dioxide is vital for the nutrition and the survival of all plants and animals.

has remained almost constant for thousands of years.
(4

(b) (i)	50 years.
	Suggest reasons for this rise.
(ii)	Polluted air sometimes contains carbon monoxide. Describe and explain how humans are affected by this gas if it is inhaled.
(ii)	Polluted air sometimes contains carbon monoxide. Describe and explain how
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