| Centre No. | | | | | Pape | er Refer | ence | | | Surname | Initial(s) |
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Paner Reference(s)

7042/02

London Examinations GCE Human Biology Ordinary Level

| Paper | 2 |
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| 1 apci | _ |

Thursday 22 January 2009 - Morning

Time: 2 hours

| Materials required for examination | Items included with question paper |
|------------------------------------|------------------------------------|
| Nil | Nil |

Instructions to Candidates

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

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

Indicate which question you are answering by marking the box (\boxtimes). 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.

All 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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 $\begin{array}{c} N31012A \\ N310127 \\ N310127 \\ N310124 \\ N350/U7042/57570 \\ N350/U704/570 \\$



Turn over

Total

Examiner's use only

Question Number

1

2

3

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7



SECTION A

Answer any THREE questions in this section.

If you answer Question 1, put a cross in this box $\[\]$.

| (a) (i) | Describe how you would test a sample of urine for the presence of glucos | e. |
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| (ii) |) Suggest why a person with diabetes may have glucose in their urine. | •••• |
| (ii |) Suggest why a person with diabetes may have glucose in their urine. | |
| (ii) | Suggest why a person with diabetes may have glucose in their urine. | |
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| | | If you answer Question 2, put a cross in this box \square . | |
| 2. | A potato | o consists largely of water and approximately 20% starch. | |
| | (a) (i) | Describe how you would test for the presence of starch in a potato. | |
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| (4) Suggest and explain why a person who only eats potatoes for their diet would soon become unwell. | | |
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| (4) Suggest and explain why a person who only eats potatoes for their diet would soon become unwell. | | |
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If you answer Question 3, put a cross in this box \square .

- **3.** Epithelial cells form a lining to structures in the body and there are several types of epithelial cell.
 - (a) (i) Draw a large labelled diagram to show the structure of an epithelial cell from the lining inside your cheek.

(4)

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| (ii) | Describe and explain differences in the structure and functions of epithelial cells from the lining of the cheek and the lining of the trachea. |
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| (i) | Describe the structure of an enzyme. |
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| | of an enzyme. |

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| | | | If you answer Question 4, put a cross in this box \square . |
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| 4. | | | somes are found in the nucleus of a cell and are involved in the inheritance of a characteristics. |
| | (a) | (i) | Describe the structure of a chromosome. |
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| | | (ii) | Explain how a person's chromosomes determine their characteristics. |
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| (i) | What is the chance that this male child will have haemophilia? In your answdraw a genetic diagram and use the symbol X^H to represent the allele for nor blood clotting and the symbol X^h to represent the allele for haemophilia. |
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| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |
| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |
| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |
| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |
| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |
| (ii) | Suggest why it is unlikely that females have the condition of haemophilia. |

| Е | xplain how two parents who are both blood group B can produce a child who is |
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| | lood group O. |
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| Urea i | a is a waste product. It is produced in the liver and excreted by the kidneys. | | | | |
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| (a) (i) |) | Explain why urea is made. | | | |
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| | TOTAL FOR SECTION A: 60 MARKS |
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| c) Explain why the amount of urea produ | |
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SECTION B

Answer any TWO questions in this section.

| | If you answer Question 6, put a cross in this box \square . | | | | | | |
|----|---|--|--------------|--|--|--|--|
| 6. | (a) | (a) Describe how each of the following helps protect the body against disease. | | | | | |
| | | (i) | Phagocytosis | | | | |
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| | | (ii) Antibodies | | | | | |
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| | (iii) Blood clotting |
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| | (4) |
| (b) | Describe how a person can gain artificial immunity to a disease. |
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| Pollution of ponds and rivers by sewage can be harmful to both humans and fish. | | |
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| () | Explain how raw sewage in a river can be harmful to human health. | |
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| | | | If you answer Question 8, put a cross in this box \square . | |
| 8. | (a) | The | e spread of some diseases involves insects. | |
| | | (i) | Describe how houseflies may help to spread typhoid. | |
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| | | (ii) | Explain why it may take several days for a person to show the symptoms of typhoid after the typhoid bacillus has entered that person. | |
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|) De | scribe some ways in which bacteria are useful to humans. |
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If you answer Question 9, put a cross in this box \square .

- 9. Pit latrines are used in some places for the disposal of faeces and urine.

 The pit latrines are situated in small villages or near isolated houses. It is important that the soil is permeable and they are at least 30 metres from wells.
 - (a) Describe the structure of a pit latrine. Draw a large labelled diagram to illustrate your answer.

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| (ii | Explain why it is best to build pit latrines at least 30 metres from wells. | |
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| (c) Sı | aggest why disinfectant should not be poured into a pit latrine. | |
| (6) 50 | aggest why disinfectant should not be poured into a pit fatime. | |
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| (d) Suggest why pit latrines may be unsuitable for use in large towns. | Dialik |
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| (3) | Q9 |
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| (Total 20 marks) TOTAL FOR SECTION B: 40 MARKS | |
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