



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge Checkpoint

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

SCIENCE

1113/02

Paper 2

April/May 2009

45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.



READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer **all** questions.

You should show all your working in the booklet.

The number of marks is given in brackets [] at the end of each question or part question.

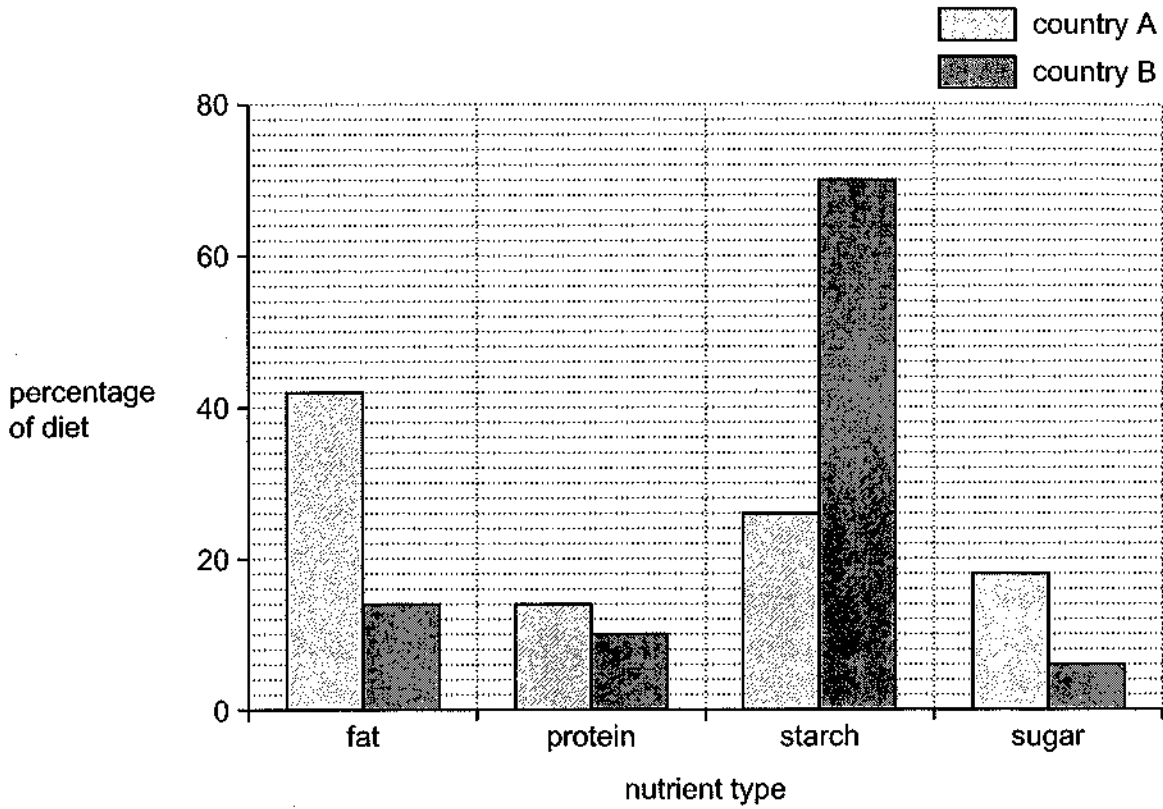
The total number of marks for this paper is 50.

This document consists of 12 printed pages.





1 The chart below compares the diet of people in country A and country B.



(a) What is the percentage of fat in the diet of people in country A?

..... [1]

(b) What is the **total** percentage of carbohydrate in the diet of people in country B?

..... [1]

(c) What is the major use of protein in the body?

..... [1]

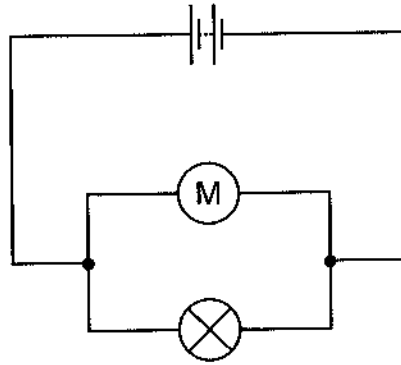
(d) Name **one** disease which may occur as a result of the high fat consumption in country A.

..... [1]

DO NOT WRITE IN THIS MARGIN



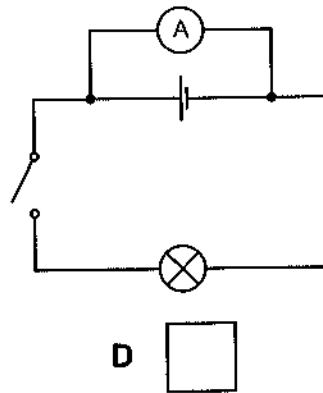
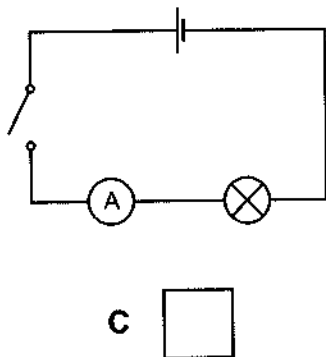
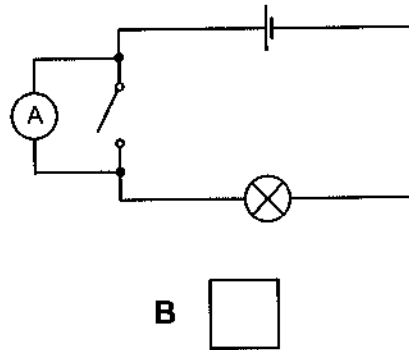
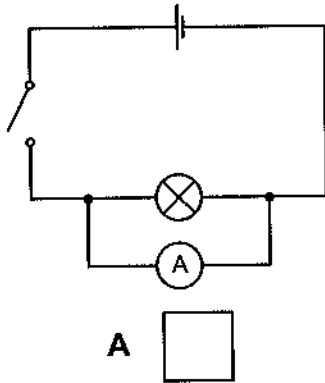
- 3 (a) Draw an ammeter symbol (A) on this circuit diagram where it would measure the current through the electric motor (M).



[1]

- (b) Which circuit diagram below shows the correct position of the ammeter to measure the current in the circuit when the switch is closed?

Tick the correct answer.

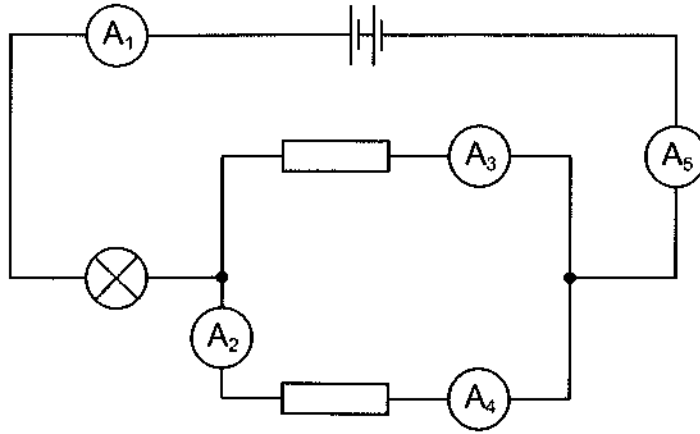


[1]

DO NOT WRITE IN THIS MARGIN



(c) Complete the table to show the reading on each ammeter in this circuit.

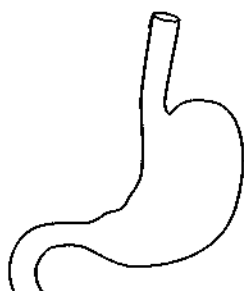


Ammeter	Current/amps
1	5
2	
3	
4	3
5	

[3]



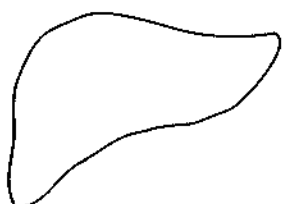
4 The diagrams show organs of the human body.
Give the names of these organs.



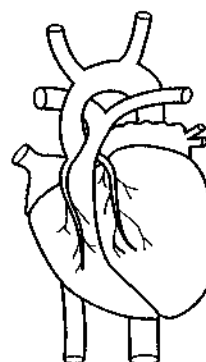
(a)



(b)



(c)



(d)

[4]

5 (a) What characteristic do all vertebrates share?

.....

[1]

(b) To which group of vertebrates does each of the following animals belong?

(i) snake

.....

[1]

(ii) frog

.....

[1]

(c) Which type of body covering is characteristic of both reptiles and fish?

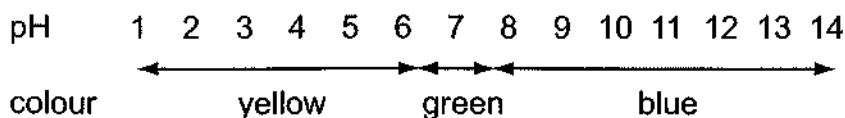
.....

[1]

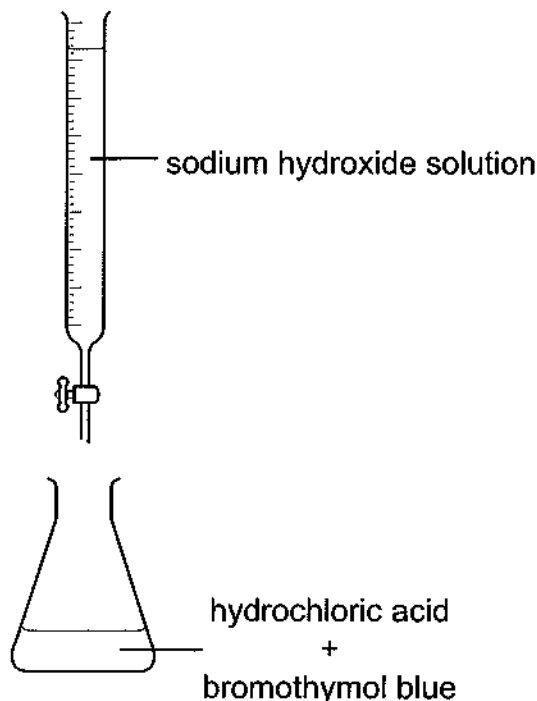
DO NOT WRITE IN THIS MARGIN



6 Bromothymol blue is an indicator. The chart shows the colour of bromothymol blue at different pH values.



Bromothymol blue was added to hydrochloric acid in a conical flask. Then sodium hydroxide solution was added from a burette.



(a) (i) What was the colour of the bromothymol blue before any sodium hydroxide solution was added?

..... [1]

(ii) What was the colour of the bromothymol blue after excess sodium hydroxide solution was added?

..... [1]

(iii) What was the pH of the solution when it was neutral?

..... [1]

(iv) Give the name of the salt formed in this reaction.

..... [1]

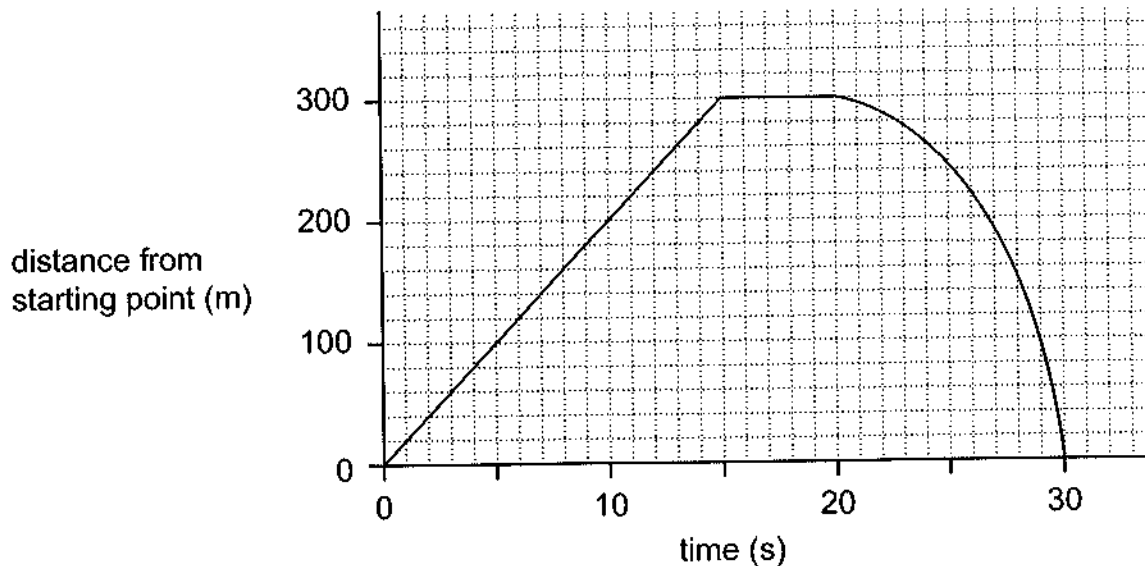
(b) Underline the names of **two** other chemicals that react with hydrochloric acid to form salts.

- copper
- copper carbonate
- magnesium
- magnesium sulfate
- potassium chloride

[2]



- 7 The distance-time graph shows the movement of a car along a straight road after passing a particular point.



- (a) Calculate the average speed during the time 0 to 15 s.
Show your working.

..... [3]

- (b) Describe what happens during the time 15 s to 20 s.

..... [1]

- (c) Where is the car after 30 s?

..... [1]

- (d) Compare the average speed from 20 s to 30 s with that in (a).
Underline the correct answer.

faster

slower

the same

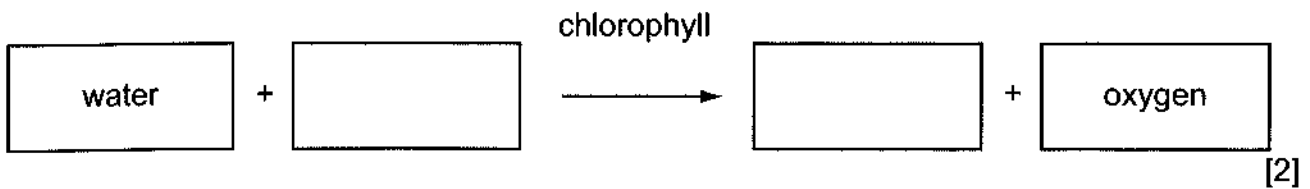
[1]



- 8 A man has a garden centre.
 He grows his plants in a glasshouse.
 He does this so that he can produce large, healthy plants for sale.



- (a) Plants use photosynthesis to grow.
 Complete the word equation for photosynthesis.



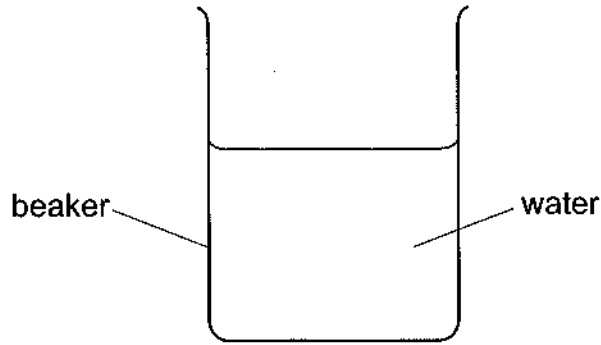
- (b) The man has to create the best growing conditions for his plants.
 He cleans the windows regularly and uses a paraffin heater to keep the air warm.
 The waste gas from the paraffin heater is circulated through the glasshouse.
 He waters the plants with a fertiliser which contains magnesium salts.

Explain how each of these actions improves the rate of photosynthesis in his plants.

- (i) keeping the windows clean
 [1]
- (ii) circulating the waste gas from the burned paraffin through the greenhouse
 [1]
- (iii) watering the plants with a fertiliser solution containing magnesium salts
 [1]



9 The diagram shows a beaker containing some water.



(a) The depth of the water in the beaker is increased.

What effect does this have on the pressure on the base of the beaker?

..... [1]

(b) A beaker with a greater base area is filled to the same depth as the original beaker.

What effect does this have on the pressure on the base of the beaker?

..... [1]

(c) The air exerts a pressure on the sides of the beaker.

What causes this pressure?

..... [1]

DO NOT WRITE IN THIS MARGIN



10 The element fluorine is shown in the Periodic Table as:

19
F
fluorine
9

Use the numbers listed below to complete the sentences that follow.

9

10

19

28

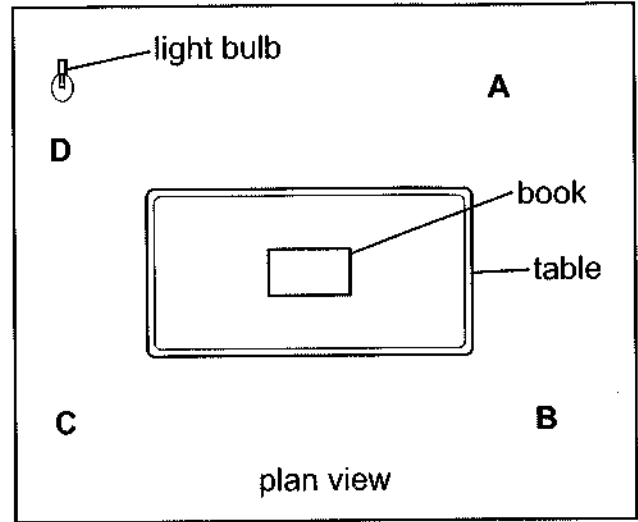
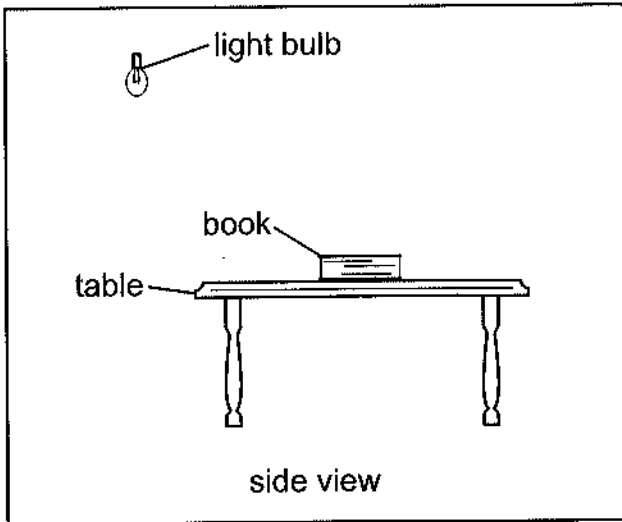
A fluorine atom has:

- (a) an atomic number of [1]
- (b) electrons in its orbit. [1]
- (c) neutrons in its nucleus. [1]
- (d) an atomic mass of [1]

DO NOT WRITE IN THIS MARGIN



11 (a) A book lies on top of a table. A light bulb hangs from the ceiling, but is not directly above the table.
This is the only source of light in the room.



Four people are standing in the room, at positions A, B, C and D.

(i) Explain why all four people can see the book.

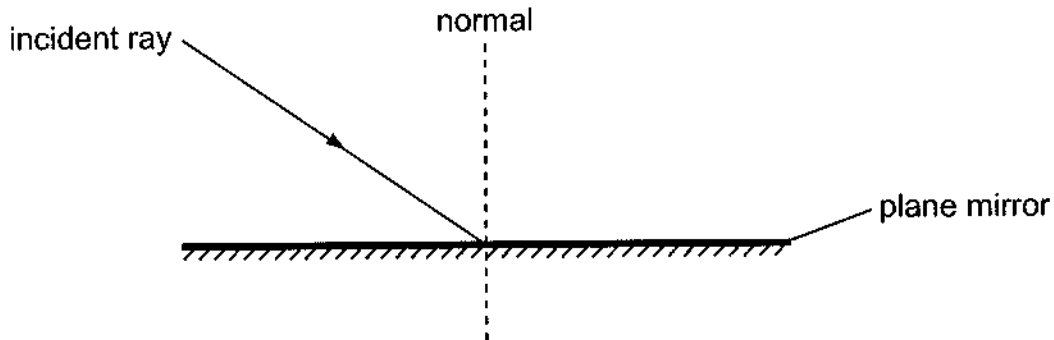
..... [2]

The book is replaced by a plane mirror lying flat on the table.

(ii) How many of the people can see the bulb reflected in the mirror?

..... [1]

(b) On the diagram below, label the angle of incidence, i , and draw in the reflected ray.



[2]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.