

<b>Candidate forename</b>		<b>Candidate surname</b>	
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<b>Centre number</b>						<b>Candidate number</b>				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
ADVANCED SUBSIDIARY GCE**

**G623/PLAN**

**APPLIED SCIENCE**

**Cells and Molecules**

**PLAN FOR AN INVESTIGATION**

**For issue on or after: 13 MARCH 2011**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**OCR SUPPLIED MATERIALS:**

**Insert (inserted)**

**TIME: THE PLAN MUST BE HANDED IN BY THE DEADLINE  
GIVEN BY YOUR TEACHER.**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Attach these sheets to the front of your Plan.**

## **INFORMATION FOR CANDIDATES**

- **You will be awarded marks for the quality of your written communication.**
- **Detailed notes for guidance are given on pages 3-4.**

### **AUTHENTICATION BY TEACHER**

**I declare that, to the best of my knowledge, the work submitted is that of the candidate concerned. I have provided details on my report form for the Plan for an Investigation of any assistance given.**

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## **NOTES FOR GUIDANCE**

- 1 Your Plan should have a clear and helpful structure and should be illustrated by diagrams, tables, charts, graphs etc. as appropriate. Remember that these can often be used to replace words in the text. Diagrams should be relevant to the content of your Plan and positioned appropriately. Labels on diagrams, flow charts or tables should be clear and concise. Large blocks of text should be included in the word count.**
- 2 You should take care to use technical and scientific terms correctly and to write in clear and correct English.**
- 3 Your Plan should be hand-written or word-processed on A4 paper, which should have a hole punched at the top left-hand corner. Pages should be numbered and should have a clear margin on the right-hand side. You should write (or print) on ONE side of the paper only and each sheet should be marked with your centre number and candidate number.**
- 4 You should show that you have consulted an appropriate range and variety of sources. At the end of your Plan you should clearly list the sources you have used. You should refer to these references in your Plan where appropriate. Where you have incorporated material that has been copied directly from a source such as a book or the internet, this must be acknowledged in your Plan and details included in the references at the end. However, it should be noted that the inclusion of copied material will not in itself gain credit. The list of references should not be included in the word count.**

- 5 Your Plan should be based on the use of standard equipment, apparatus, chemicals and other materials available in a school or college science laboratory.**
- 6 Your Plan should be about 800 to 1000 words. A Plan that is in excess of 1000 words is likely to have poor structure and unselective choice of material, so that full credit may not be available. You should indicate the number of words in the margin of the Plan at approximately 100 word intervals.**
- 7 When you have finished, tie the pages loosely together (or use a treasury tag), with this sheet on the top, so that the pages turn over freely. Your centre will give you the date by which your Plan must be handed in.**

#### **NOTICE TO CANDIDATE**

**The work you submit for assessment must be your own. If you copy from someone else or allow another candidate to copy from you, or if you cheat in any other way, you may be disqualified from at least the subject concerned.**

- 1 Any help or information you have received from people other than your subject teacher(s) must be clearly identified in the work itself.**
- 2 Any books, information leaflets or other material (e.g. videos, software packages or information from the Internet) that you have used to help you complete this work must be clearly acknowledged in the work itself. To present material copied from books or other sources without acknowledgement will be regarded as deliberate deception.**

## **DECLARATION BY CANDIDATE**

**I have read and understood the NOTICE TO CANDIDATE (opposite). I have produced the work without any help from other people apart from that which I have declared in the work itself. I have acknowledged all source materials in the work itself.**

**Candidate's signature \_\_\_\_\_**

**Date \_\_\_\_\_**

## **EXAMINATION PRE-TASK**

**Read the extracts about *Spirulina*.**

**The extracts are to give you some background information that you might find helpful in planning for the task that follows. Not all the information will be directly relevant and you are expected to select information which is relevant to the task, from Unit G622 'Monitoring the Activity of the Human Body' and Unit G623 'Cells and Molecules'.**

**Your task is to plan an investigation to study the effect of sodium hydrogencarbonate concentration on the population growth of a culture of a named Cyanobacterium e.g. *Arthrospira platensis*, *Arthrospira maxima* or *Anabaena.sp.***

**Your plan should clearly indicate how you would carry out the procedure and you should indicate how you would present and analyse your data to draw your conclusions.**

**There is no requirement to carry out your Plan.**

**Your Plan will be marked according to the following assessment criteria.**

<b>CANDIDATES:</b>	<b>MARKING CRITERIA</b>	<b>MARK</b>
• include a risk assessment to show how the investigation will be carried out safely;	easily recognised safety procedures highlighted;	1
• make a prediction and produce justification;	prediction made; with justification;	1 1
• describe and explain the reasoning behind any preliminary work carried out;	description; clear and in detail; reasons explained; clear and in detail;	1 1 1 1
• identify relevant secondary sources of information used;	identified; relevance explained;	1 1
• plan how to use appropriate techniques to carry out a detailed practical investigation;	basic skills and reasonable accuracy; sound skills and accuracy;	1 1
• list the equipment required;	range of appropriate; full range of appropriate;	1 1
• state the number of measurements to be taken;	appropriate number;	1
• state the range of measurements to be taken;	need recognised; appropriate range;	1 1
• identify any variables that could affect the validity of any conclusions made and explain how variables will be controlled;	relevant variables are identified; controlled;	1 1
• show how they would present and display the data they could collect using suitable methods;	suitable methods identified;	2
• indicate how the data will be analysed;	simple data-handling; conclusions possible;	1 1

• evaluate the investigation.	sources of error recognised;	1
	methods for improving accuracy and/or validity suggested;	1
<b>TOTAL MARKS AVAILABLE:</b>		<b>24</b>
<b>ADDITIONAL MARK AWARDED ON PLAN FOR USE OF SCIENTIFIC TERMINOLOGY:</b>		<b>1</b>
<b>TOTAL:</b>		<b>25</b>



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