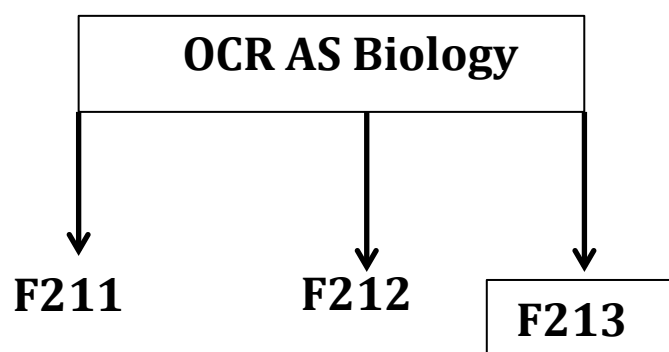


## OCR AS Biology A (H034)

### F213: Practical Skills in Biology 1




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| Unit F213: <i>Practical Skills in Biology 1</i>  |                               | Paper code: F213                     |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
|--|-------------------------------|--------------------------------------|------|-------------------------------|------------------------------------|----------|-----|---|----------|-----|----|----------|-----|---|----------|-----|----|----------|-----|---|----------|-----|----|----------|-----|---|----------|-----|----|----------|-----|----|----------|---|---|
| 1. Exam paper- Unit F213: Practical skills in Biology 1<br>Internal assessment   |                               | 10 % of<br>Advanced GCE<br>Chemistry |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| <p style="text-align: center;"><b>Overview of content</b></p> <p>1. Module 1: Qualitative task [10 marks]</p> <p>2. Module 2: Quantitative task [10 marks]</p> <p>3. Module 3: Evaluative task [20 marks]</p>  |                               |                                      |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| <p style="text-align: center;"><b>Overview of assessment</b></p> <p>1. The qualitative, quantitative and evaluative tasks are assessed internally under controlled conditions.</p> <p>2. The total number of marks is 40.</p> <p>3. Grades A–E are available.</p> <p>4. Grades assessment by year:</p> <table border="1" data-bbox="440 967 1217 1402"> <thead> <tr> <th>Year</th><th>Raw Marks to<br/>90 % UMS - A*</th><th>Raw Marks to<br/>80 % UMS grade 'A'</th></tr> </thead> <tbody> <tr><td>Jan 2010</td><td>N/A</td><td>-</td></tr> <tr><td>Jun 2010</td><td>N/A</td><td>34</td></tr> <tr><td>Jan 2011</td><td>N/A</td><td>-</td></tr> <tr><td>Jun 2011</td><td>N/A</td><td>34</td></tr> <tr><td>Jan 2012</td><td>N/A</td><td>-</td></tr> <tr><td>Jun 2012</td><td>N/A</td><td>36</td></tr> <tr><td>Jan 2013</td><td>N/A</td><td>-</td></tr> <tr><td>Jun 2013</td><td>N/A</td><td>35</td></tr> <tr><td>Jun 2014</td><td>N/A</td><td>34</td></tr> <tr><td>Jun 2015</td><td>?</td><td>?</td></tr> </tbody> </table> |                               |                                      | Year | Raw Marks to<br>90 % UMS - A* | Raw Marks to<br>80 % UMS grade 'A' | Jan 2010 | N/A | - | Jun 2010 | N/A | 34 | Jan 2011 | N/A | - | Jun 2011 | N/A | 34 | Jan 2012 | N/A | - | Jun 2012 | N/A | 36 | Jan 2013 | N/A | - | Jun 2013 | N/A | 35 | Jun 2014 | N/A | 34 | Jun 2015 | ? | ? |
| Year   | Raw Marks to<br>90 % UMS - A* | Raw Marks to<br>80 % UMS grade 'A'   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jan 2010   | N/A                           | -                                    |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2010   | N/A                           | 34                                   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jan 2011   | N/A                           | -                                    |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2011   | N/A                           | 34                                   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jan 2012   | N/A                           | -                                    |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2012   | N/A                           | 36                                   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jan 2013   | N/A                           | -                                    |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2013   | N/A                           | 35                                   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2014   | N/A                           | 34                                   |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |
| Jun 2015   | ?                             | ?                                    |      |                               |                                    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |   |          |     |    |          |     |    |          |   |   |

## OCR AS Biology A

AS unit F213: *Practical Skills in Biology 1*

## Qualitative Task

OCR  AS QUALITATIVE

**For assessment use between  
1 June 2013 and 14 May 2014**

AS GCE CHEMISTRY A  
F323/Task 3/TASK

Practical Skills in Chemistry 1  
Qualitative Task 3: Identifying solutions and reacting solids

Candidates answer on the Task sheet

|                       |  |                      |  |
|-----------------------|--|----------------------|--|
| Candidate<br>forename |  | Candidate<br>surname |  |
| Centre number         |  | Candidate number     |  |
| Date Assessed         |  |                      |  |


## INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your centre number and candidate number and the date of assessment in the boxes above.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** parts of the Task, in the spaces provided. Additional paper may be supplied if necessary.

## INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- You may use a scientific calculator.
- You may use the *Data Sheet for Chemistry A*.
- You are advised to show all the steps in any calculations.
- Use of text books and class notes is not permitted.
- The total number of marks for this Task is 10.

## Quantitative Task

OCR  AS QUANTITATIVE

**For assessment use between  
1 June 2013 and 14 May 2014**

AS GCE CHEMISTRY A  
F323/Task 3/TASK

Practical Skills in Chemistry 1  
Quantitative Task 3: Determining the concentration of a solution of sulfuric acid

Candidates answer on the Task sheet

|                       |  |                      |  |
|-----------------------|--|----------------------|--|
| Candidate<br>forename |  | Candidate<br>surname |  |
| Centre number         |  | Candidate number     |  |
| Date Assessed         |  |                      |  |

## INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your centre number and candidate number and the date of assessment in the boxes above.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** parts of the Task, in the spaces provided. Additional paper may be supplied if necessary.

## INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [ ] at the end of each question or part question.
- You may use a scientific calculator.
- You may use the *Data Sheet for Chemistry A*.
- You are advised to show all the steps in any calculations.
- Use of text books and class notes is not permitted.
- The total number of marks for this Task is 15.
- This document consists of 5 pages. Any blank pages are indicated.

| FOR TEACHER'S USE |      |      |
|-------------------|------|------|
|                   | MAX. | MARK |
| TOTAL             | 15   |      |


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For assessment use between 1 June 2013 and 14 May 2014

## Evaluative Task

OCR  AS EVALUATIVE

**For assessment use between  
1 June 2013 and 14 May 2014**

AS GCE CHEMISTRY A  
F323/Task 1/MARK SCHEME

Practical Skills in Chemistry 1  
Evaluative Task 1: The analysis of a carboxylic acid

Further guidance is available in the Practical Skills Handbook.

Once the work has been collected in, it must be kept secure and marked by the teacher as it stands. Marked work must not be returned to the candidate.

Under no circumstances can a candidate be allowed to change or elaborate on an answer.

Teachers are reminded that it is possible for a candidate to be assessed on another occasion using a different Task and that the best mark achieved for each Task type should be submitted. It is appropriate for the teacher to provide feedback to explain how the work could have been improved although **details of the Mark Scheme and of which marking points were and were not awarded must not be directly communicated to the candidate.**

Mark Tasks clearly, in red ink, in accordance with the Mark Scheme. Annotation can help the Moderator and staff in the centre who are checking the marking as part of internal standardisation. Useful annotations consist of:

- ticks and crosses against responses to show where marks have been earned or not earned;
- specific words or phrases to confirm why a mark has been earned or indicate why a mark has not been earned (eg indicate an omission).

Where a candidate has given an answer not covered by the Mark Scheme, the teacher should use their professional judgement to decide whether the answer is worthy of credit. If it is, then the script should be annotated accordingly and the mark(s) awarded. Half marks must not be awarded.

From time to time OCR may need to publish clarification for a Task or Mark Scheme. Please ensure that you check interchange before using a Task for assessment to ensure that no modifications have been posted, and check again before the final submission of marks to OCR. Any changes made will be flagged in the Notices area of the GCE Chemistry A page on interchange and via OCR's e-mail updates service.

To subscribe to the e-mail updates service, please send an e-mail to [GCEScientists@ocr.org.uk](mailto:GCEScientists@ocr.org.uk) including your Centre Number, Centre Name and a contact name. Include the title GCE Chemistry A in the subject line.

This document consists of 4 printed pages. Any blank pages are indicated.

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Turn over

For assessment use between 1 June 2013 and 14 May 2014

## Overview of F213: *Practical skills in Biology 1*

### What are F213 practical skills in Biology 1?

- Your practical and investigative skills will be developed during the AS course under the guidance of your teacher(s).
- There is the formal internal assessment of your practical work, entitled *Practical Skills in Biology 1* (unit code F213).
- You will need to carry out three different types of task set by OCR.

### How much is the formal internal assessment of your practical skills worth?

- The practical skills are worth 40 marks. They represent 20% of the AS course (and 10% of an A level course).
- Centres will supply OCR with a single mark out of 40.

### Who does the marking and when?

- Your teacher will mark your practical skills tasks as you do them throughout the course, using a mark scheme provided by OCR.
- Within each teaching centre marks will be internally moderated by your teacher(s).
- The marking will be checked by OCR moderators. Marks can be changed to bring the marks of your school or college into line with those from other teaching centres.

### What proportion of the formal assessment will be done in lessons?

- All the tasks will be carried out under supervision during lesson time.
- Your teacher must be able to say that the work is yours.
- Both you and your teacher will have to sign documents to this effect.

### What tasks do I have to do?

- A **qualitative** task worth 10 marks
- A **quantitative** task worth 10 marks
- An **evaluative** task worth 20 marks

**What is covered by the qualitative task?**

- You will carry out a practical task using instructions supplied by OCR.
- You are expected to carry out the task skilfully and safely using qualitative techniques.
- You will need to make and record valid observations and organise them in an appropriate way.

**What is covered by the quantitative task?**

- You will carry out a practical task using instructions supplied by OCR.
- You are expected to carry out the task skilfully and safely using quantitative techniques.
- You will need to make and record accurate observations and organise them in an appropriate way.
- You will then process your results to reach valid conclusions.

**What is covered by the evaluative task?**

- You will carry out an evaluative task using instructions supplied by OCR.
- Evaluative tasks will be based on a quantitative task.
- Evaluative tasks will *not* require additional data collection.
- The data along with your own knowledge will be used to reach valid conclusions.
- You will need to assess the reliability and accuracy of an experimental task.
- You will need to identify anomalies as well as identify significant weaknesses in procedures and measurements.
- You will use your knowledge to understand and select simple improvements to procedures and measurements.

**Do I have to plan a practical?**

- No, but you may be required to suggest changes to techniques or apparatus which will improve the accuracy or reliability of the results and/or the validity of the conclusions.

**Will every piece of practical work be assessed?**

- No. OCR provides certain tasks, which can be done at any point during the course, but your teacher should do other work with you to develop your skills.
- The *minimum* number of practical assessments would be one for each of the three types of task. However, it is likely that you will do more than three.

**If I do more than three practical assessments, which ones count towards AS?**

- Your final mark out of a possible 40 will be comprised of the *best* scores that you achieve for a qualitative task, a quantitative task and an evaluative task.

## **How BioChem Tuition prepares their students for F213: *Practical Skills in Biology 1*?**

### **The Qualitative, Quantitative and Evaluative Task – [10 hours]**

BioChem Tuition will revise the AS Biology F213 theory that is likely to appear in the qualitative, qualitative and quantitative tasks. This will be followed by practice of wide range of skills required to successfully complete the tasks. Although OCR does not release the F213 practical tasks externally, BioChem Tuition has prepared past exam papers covering range of AS topics. Practice of these papers along with past F213 style papers helps student attain high grade in this unit. These papers will help identify the likely questions in the exam. Learning every possible question type and applying the right knowledge forms the key to attain high marks. BioChem Tuition can also help students with any specific task that they are undertaking in school. Given our interaction with students from various schools, we can provide you with up-to-date information on the knowledge likely to appear in the current practical task.

#### **When carrying out qualitative and quantitative tasks, students will be taught:**

- How to make comments about safety. These comments should be relevant to the practical and *not* be general safety comments.
- An explanation as to *why* you are taking a safety precaution is helpful, for example, including a reference to a hazard.
- Organise your work area and wipe up any spillages.
- How to make measurements with accuracy.
- All the raw readings should be recorded to the same number of decimal places.
- Calculations should be calculated to no more decimal places than the input data.
- How to measure data with a degree of precision consistent with the equipment used to make the measurement.
- Repeat measurements where necessary and calculate an average.
- How to record all your results in a table with column headings labeled with a quantity *and* a unit.
- Carefully describe any observations. Drawing diagrams may also be necessary.
- Scales on graphs must be labeled with the quantity being measured along with its unit and the value being changed along with its unit. Scales must be linear and simple.
- The scale must be correctly selected to make good use of the graph paper.
- How to plot all points accurately and clearly. Use a sharp pencil and check carefully any points that do not appear to fit a trend.
- Draw lines with a ruler through the points if there is any uncertainty about the intermediate values between your readings, otherwise

draw a line of best-fit through your points. The line must be thin and clear.

**In addition to points set out in qualitative and quantitative section, while carrying out evaluative tasks, students will be taught:**

- How to carry out calculations using the correct mean of a set of data.
- Make a note of procedural errors as you carry out a practical.
- Explain how each of these difficulties or errors could have affected your results.
- How to assess the reliability of the experiment, identify anomalous results and refer to the scatter of points of the replicates about the mean or best-fit line.
- How to put errors in order of significance.
- How to calculate the percentage error of measurements. Take care with stopwatches – often a stopwatch will read to 0.01s; however, human reaction time is at least 0.1s, therefore it is not 0.01s but 0.1s.
- Explain how these procedural errors may be overcome by suggesting improvements to the procedure and to the apparatus used which would improve the accuracy of the experiment. Your improvements *must* relate to the experiment and be possible within a school laboratory.