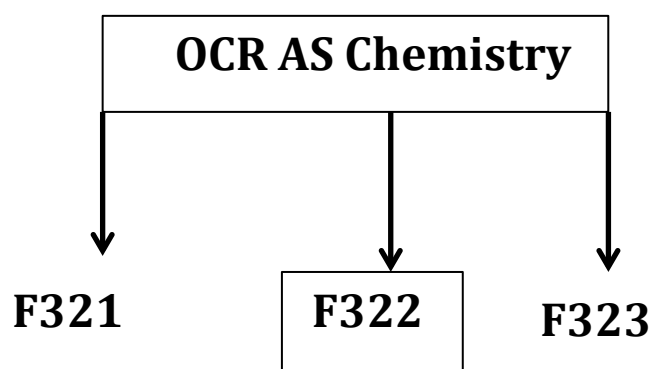


## OCR Advanced GCE Chemistry A (H034)



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Unit F322: Chains, Energy and Resources	Paper code: F322 QP																																	
1. Exam paper- Unit F322: Chains, Energy and Resources 2 <sup>nd</sup> June 2015 – 1 hour and 45 min	25 % of Advanced GCE Chemistry																																	
<b>Overview of content</b>																																		
<ol style="list-style-type: none"> <li>Module 1: Basic Concepts and Hydrocarbons</li> <li>Module 2: Alcohols, Halogenoalkanes and Analysis</li> <li>Module 3: Energy</li> <li>Module 4: Resources</li> </ol>																																		
<b>Overview of assessment</b>																																		
<ol style="list-style-type: none"> <li>The unit is assessed through a 1 hour and 45 min examination paper set and marked by OCR.</li> <li>The total number of marks is 60.</li> <li>Grades A–E are available.</li> <li>Grades assessment by year:</li> </ol>																																		
<table border="1"> <thead> <tr> <th>Year</th> <th>Raw Marks to 90 % UMS - A*</th> <th>Raw Marks to 80 % UMS grade 'A'</th> </tr> </thead> <tbody> <tr> <td>Jan 2010</td> <td>-</td> <td></td> </tr> <tr> <td>Jun 2010</td> <td>-</td> <td>77</td> </tr> <tr> <td>Jan 2011</td> <td>-</td> <td>71</td> </tr> <tr> <td>Jun 2011</td> <td>-</td> <td>76</td> </tr> <tr> <td>Jan 2012</td> <td>-</td> <td>83</td> </tr> <tr> <td>Jun 2012</td> <td>-</td> <td>79</td> </tr> <tr> <td>Jan 2013</td> <td>-</td> <td>79</td> </tr> <tr> <td>Jun 2013</td> <td>-</td> <td>82</td> </tr> <tr> <td>Jun 2014</td> <td>-</td> <td>74</td> </tr> <tr> <td>Jun 2015</td> <td>-</td> <td>?</td> </tr> </tbody> </table>		Year	Raw Marks to 90 % UMS - A*	Raw Marks to 80 % UMS grade 'A'	Jan 2010	-		Jun 2010	-	77	Jan 2011	-	71	Jun 2011	-	76	Jan 2012	-	83	Jun 2012	-	79	Jan 2013	-	79	Jun 2013	-	82	Jun 2014	-	74	Jun 2015	-	?
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# OCR Advanced GCE Chemistry A

## A2 unit F322: *Chains, Energy and Resources*

### Module 1: Basic Concepts and Hydrocarbons

### Module 2: Alcohols, Haloalkanes and analysis

### Module 3: Energy

### Module 4: Resources

Basic concepts

Alkanes

Alkenes

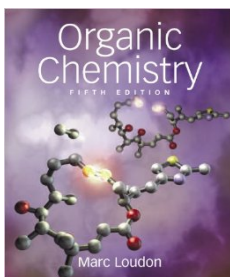
Alcohols  
&  
Haloalkanes

Modern analytical  
techniques

Enthalpy  
changes

Rates and  
equilibrium

Chemistry of the air  
& Green Chemistry

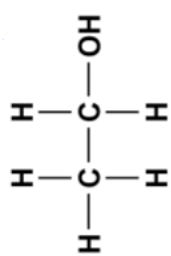


Alkenes  $C_nH_{2n}$

ethene  $C_2H_4$

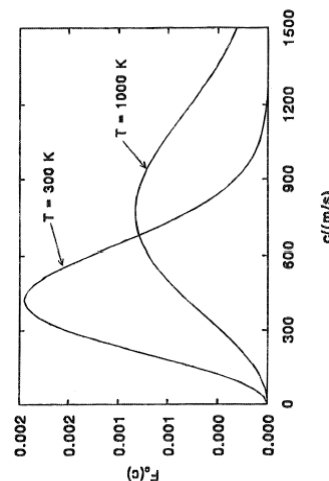
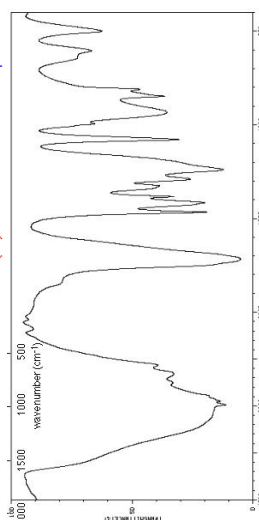
propene  $C_3H_6$

butene  $C_4H_8$



Side chain (R)

Functional Group



## How BioChem Tuition prepares their students for F322: *Chains, energy and resources?*

BioChem Tuition has a three-pronged strategy to attack F322 that helps students to attain A or A\*.

1. **Detailed F322 knowledge:** The students will study the specification of OCR F322 alongside extensive practice of examination style questions to help them retain the content of the specification. The students will receive detailed F322 notes prepared by BioChem Tuition. This is supplemented by examination style questions to gauge the student's level of understanding of the topic.

### Key features

- ✓ F322 specification notes.
  - ✓ F322 examination style past examination questions.
  - ✓ 1-2-1 help in understanding the key examiner points.
  - ✓ Revision notes and charts to aid revision.
2. **Practice OCR past examination papers (2001-2014):** All students will complete at least 14 years of OCR past exam papers. BioChem Tuition will provide all the past papers in printed form to the students. Candidates are required to complete past papers, which are checked and marked in light of the official examiner report and mark scheme in the presence of the student. Any mistakes will be followed up to ensure the mistakes are not repeated. The students will be shown how to maximise their marks by following our exam technique and also methods to improve comprehension for scientific questions.

### Key features

- ✓ 14 years of past examination papers practice.
  - ✓ 1-2-1 help in understanding the exam technique.
  - ✓ Revisit the mistakes and practice relevant questions to ensure the mistakes are not repeated.
  - ✓ Past paper practice can be extended by solving F322 style questions from AQA, CIE and Edexcel exam boards.
3. **Mock examination practice:** Mock F322 examination practice to give student feedback on the likely grade achievable in the exams.

### Key features

- ✓ Mock examination practice to simulate exam experience, which will be marked, graded and feedback on mistakes provided.

**How To Achieve Grade 'A' or 'A\*'**  
**F322: *Chains, energy and resources***

**Intensive tutoring**

**Past papers practice (2001-2014)**

**Mock examination practice**

- 1. Cover F322 Specification**
- 2. Practice examination style questions**

- 1. Solve F322 past papers.**
- 2. Revisit the mistakes/revise topics**

- 1. Solve mock examination papers to prepare for the exam**

## F322 Tuition Plan

<b>Tuition Plan for F322: Chains, energy and resources</b>	
<b>Stage 1: Specification Topics</b>	<b>Tuition time</b>
<b>Module 1: Basic concepts and hydrocarbons</b>	<b>6 hours</b>
<p style="text-align: center;"><b>1.1 Basic concepts, alkanes and alkenes</b></p> <ul style="list-style-type: none"> <li>• Nomenclature, functional groups, reaction mechanisms, percentage yield and atom economy.</li> <li>• Alkanes, hydrocarbons from crude oil and hydrocarbons as fuels.</li> <li>• Alkenes, addition reactions, polymers.</li> </ul>	<b>3 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>basic concepts, alkanes and alkenes</b></li> </ul>	<b>3 hours</b>
<b>Module 2: Alcohols, haloalkanes and analysis</b>	<b>8 hours</b>
<p style="text-align: center;"><b>2.1 Alcohols, halogenoalkanes &amp; modern analytical techniques.</b></p> <ul style="list-style-type: none"> <li>• Alcohols and reaction of alcohols.</li> <li>• Reactions of alcohols – oxidation, esterification</li> <li>• Halogenoalkanes – substitution reactions &amp; use</li> <li>• Modern analytical techniques – Infrared &amp; mass spectrometry.</li> </ul>	<b>4 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>Alcohols, halogenoalkanes and modern analytical techniques.</b></li> </ul>	<b>4 hours</b>

<b>Module 3: Energy</b>		<b>10 hours</b>
<b>3.1 Enthalpy changes, Rates and equilibrium</b>		
<ul style="list-style-type: none"> <li>• Enthalpy changes of combustion and formation. <ul style="list-style-type: none"> <li>• Bond enthalpies.</li> <li>• Hess' law and enthalpy cycle.</li> </ul> </li> <li>• Collision theory, Boltzmann curve &amp; catalysis <ul style="list-style-type: none"> <li>• Quantitative study of reaction rates.</li> <li>• Dynamic equilibrium.</li> </ul> </li> </ul>		<b>6 hours</b>
Practice of past examination style questions on <b>Enthalpy changes, Rates and equilibrium</b>		<b>4 hours</b>
<b>Module 4: Resources</b>		<b>7 hours</b>
<b>4.1 Chemistry in air &amp; green chemistry</b>		
<ul style="list-style-type: none"> <li>• Green house effect</li> <li>• Controlling pollution</li> <li>• Ozone layer</li> <li>• Sustainability</li> </ul>		<b>3 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on Periodic Table.</li> </ul>		<b>4 hours</b>
<b>Stage 2: Past paper practice</b>		<b>12 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination papers from 2001 to 2014 relevant to <b>F322: Chains, energy and resources.</b> <ul style="list-style-type: none"> <li>✓ 1 years of past examination papers practice.</li> <li>✓ 1-2-1 help in understanding the exam technique.</li> <li>✓ Revisit the mistakes and practice relevant questions to ensure the mistakes are not repeated.</li> <li>✓ Past paper practice can be extended by solving F322 style questions from other exam boards such as AQA, CIE and Edexcel.</li> </ul> </li> </ul>		<b>12 hours</b>

<b>Stage 3: <i>Mock examination practice</i></b>	<b>4 hours</b>
<ul style="list-style-type: none"><li>• Mock examination practice to simulate exam experience, which will be marked, graded and feedback on mistakes provided by BioChem Tutors.</li></ul>	4 hours