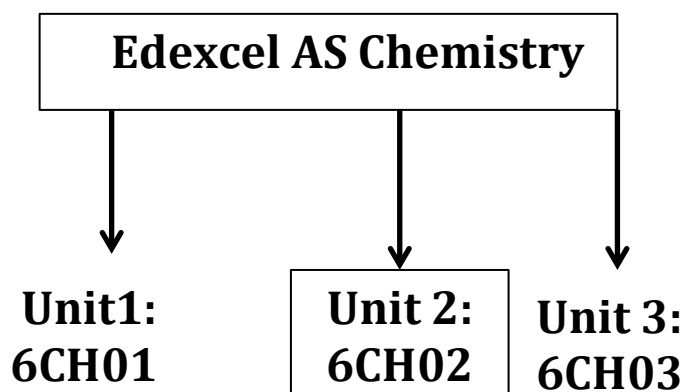


## Edexcel AS GCE Chemistry (8CH01)

### Edexcel AS Unit 2: Application of Core Principles of Chemistry



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## Unit 6CH02: Application of Core Principles of Chemistry Paper code: 6CH02

1. Exam paper-Unit 2: Application of Core Principles of Chemistry  
6CH02 2<sup>nd</sup> June 2015 (Afternoon)

20 % of  
Advanced GCE  
Biology

### Overview of content

1. Module 1: Shapes of molecules & ions, intermediate bond polarity
2. Module 2: Intermolecular forces
3. Module 3: Redox, Periodic table (group 2 & 7)
4. Module 4: Kinetics
5. Module 5: Chemical equilibria
6. Module 6: Organic Chemistry, mechanisms, mass spectrometry
7. Module 7: Green Chemistry

### Overview of assessment

1. The unit is assessed through a 1-hour and 30 min examination paper set and marked by Edexcel.
2. The total number of marks is 80 and contains Section A (MCQs) and Section B (mixture of short answer and extended answer questions) and Section C (extended answer question in contemporary context).
3. Grades A–E are available.
4. Grades assessment by year:

Year	Raw Marks to 90 % UMS - A*	Raw Marks to 80 % UMS grade 'A'
Jan 2009		56
Jun 2009		49
Jan 2010	-	51
Jun 2010	-	60
Jan 2011	-	60
Jun 2011	-	58
Jan 2012	-	61
Jun 2012	-	63
Jan 2013	-	65
Jun 2013	-	61
Jun 2013 -R	-	64
Jun 2014	-	64
Jun 2014 -R	-	60
Jun 2015	?	?

# Edexcel AS GCE Chemistry

**AS unit 6CH02: Application of the Core Principles of Chemistry**

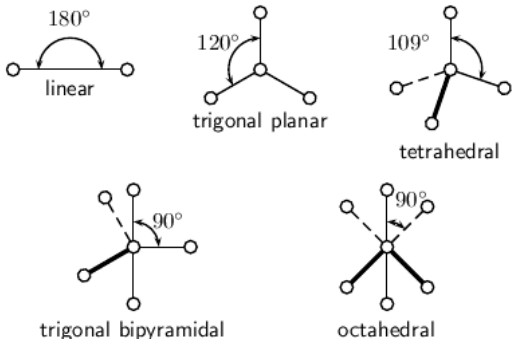
**Module 1: Shapes, polarity and Intermolecular forces**

**Module 2: Redox & Periodic table**

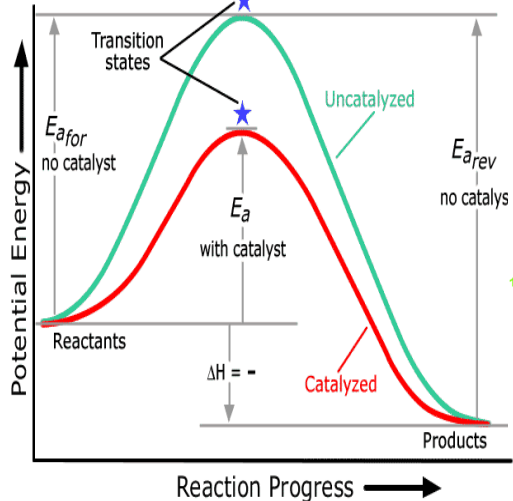
**Module 3: Kinetics and Chemical equilibria**

**Module 4: Organic Chemistry**

**Module 5: Green Chemistry**



2	He	10	
	Ne	18	
	Ar	36	
	Kr	54	
	Xe	72	
	Rn	86	
5	B	13	Al
	C	14	Si
	N	15	P
	O	16	S
	F	17	Cl
	Ne	18	Ar
	Na	19	K
	Mg	20	Ca
		21	Sc
		22	Ti
		23	V
		24	Cr
		25	Mn
		26	Fe
		27	Co
		28	Ni
		29	Cu
		30	Zn
1	H		



- 
- Green Synthesis**
1. Waste Prevention
  2. Atom Economy
  3. Less Hazardous Synthesis
  4. Safe Chemicals Design
  5. Benign Solvents and Auxiliaries
  6. Energy Efficiency
  7. Renewable Feedstocks
  8. Reduced Use Of Derivatives
  9. Catalysis
  10. Design for Degradation
  11. Real-Time Analysis
  12. Inherently Safe Chemistry

## How BioChem Tuition prepares their students for 6CH02: *Application of Core Principles of Chemistry?*

BioChem Tuition has a three-pronged strategy to prepare students for 6CH02 to help them attain A or A\*.

1. **Detailed 6CH02 knowledge:** The students will study the specification of Edexcel 6CH02 alongside extensive practice of examination style questions to help them retain the content of the specification. The students will receive detailed 6CH02 notes prepared by BioChem Tuition. This is accompanied by extensive practice of examination style questions.

### Key features

- ✓ 6CH02 specification notes.
  - ✓ 6CH02 examination style past examination questions.
  - ✓ 1-2-1 help in understanding the key examiner points.
  - ✓ Revision notes and charts to aid revision.
2. **Practice Edexcel past examination papers (1995-2014):** The students will complete at least 10 years of Edexcel 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 of scientific questions.

### Key features

- ✓ 10 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 6CH02 style questions from AQA, CIE and OCR exam boards.
3. **Mock examination practice:** Mock 6CH02 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\*'**  
**6CH02: Application of Core Principles of Chemistry**

**Intensive tutoring**

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

**Mock examination practice**

- 1. Cover 6CH02 Specification**
- 2. Practice examination style questions**

- 1. Solve 6CH02 past papers.**
- 2. Revisit the mistakes/revise topics**

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

## 6CH02 Tuition Plan

<b>Tuition Plan 6CH02: Application of core principles of chemistry</b>	
<b>Stage 1: Specification Topics</b>	<b>Tuition time</b>
<b>Module 1: Shapes of molecules, intermolecular forces and polarity</b>	<b>8 hours</b>
<p style="text-align: center;"><b>Module 1: Shapes, Polarity and Intermolecular forces</b></p> <ul style="list-style-type: none"> <li>• Shapes of molecules using electron pair repulsion theory. Bond angles and bond lengths in simple molecules.</li> <li>• Different structures of carbons – graphite, diamond and fullerenes and carbon nanotubes.</li> <li>• Electronegativity and ionic bonding/covalent bonding. Polar molecules and polar bonds.</li> <li>• Intermolecular forces – pd-pd forces, van der Waal forces and hydrogen bonds.</li> <li>• Physical properties to the type of intermolecular forces present.</li> <li>• Factors that determine the solubility of compounds.</li> </ul>	<b>4 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>Shapes, Polarity and Intermolecular forces.</b></li> </ul>	<b>4 hours</b>
<b>Module 2: Redox and Periodic Table</b>	
<b>10 hours</b>	
<p style="text-align: center;"><b>Module 2: Redox and Periodic Table.</b></p> <ul style="list-style-type: none"> <li>• Oxidation number, redox reactions, disproportionation reactions, ionic equations etc.</li> <li>• <b>Group2 properties</b> – trends in 1<sup>st</sup> ionization energy, reactions with oxygen and water, trends in the solubility of hydroxides and sulfates.</li> </ul>	<b>4 hours</b>

<ul style="list-style-type: none"><li>• Thermal stability of nitrates and carbonates and their explanation in terms of size and charge.</li><li>• Flame color, thermal decomposition of nitrates and carbonates, acid base titrations and errors in volumetric analysis.</li><li>• <b>Group 7 properties</b> - Appearance of solutions in hydrocarbon solvents and in water.</li><li>• Reactions of halogens with metallic ions in solution, disproportionation reaction with cold and hot aqueous sodium hydroxide, iodine thiosulfate titration and reactions. Potassium halides with concentrated sulphuric acids, silver halides with aqueous ammonia solution and hydrogen halides in water.</li></ul>	
<ul style="list-style-type: none"><li>• Practice of past examination style questions on <b><i>Redox and Periodic table.</i></b></li></ul>	<b>6 hours</b>

<b>Module 3: Kinetics &amp; chemical equilibria</b>		<b>4 hours</b>
<ul style="list-style-type: none"> <li>• <b>Chemical equilibria</b> – dynamic equilibrium and changes to the position of the equilibrium and interpreting the results of changes to the position of equilibrium.</li> <li>• <b>Kinetics:</b> Factors affecting the rates of reactions, Boltzmann distribution curve, collision theory, activation energy, enthalpy level diagrams, role of catalysts and factors that influence the rate of reactions.</li> </ul>		<b>2 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>Kinetics and chemical equilibria.</b></li> </ul>		<b>2 hours</b>
<b>Module 4/5: Organic chemistry, spectroscopy, Green Chemistry</b>		
		<b>12 hours</b>
<ul style="list-style-type: none"> <li>• Alcohols – Classifying alcohols and reactions of alcohols.</li> <li>• Halogenoalkanes – Nomenclature, primary secondary &amp; tertiary halogenoalkanes and their reactions.</li> <li>• Mechanisms – Mechanism of reactions encountered in unit 1 &amp; unit 2 and ozone depletion.</li> <li>• Mass spectrometry and IR- description of techniques and use in determining the structure of the molecules.</li> <li>• Green Chemistry – Sustainable reactions, green house effect, global warming and carbon neutrality. CFCs and their damaging effect on ozone layer.</li> </ul>		<b>6 hours</b>
<ul style="list-style-type: none"> <li>• Practice of past examination style questions on <b>Organic chemistry, spectroscopy and green chemistry.</b></li> </ul>		<b>6 hours</b>



<b>Past paper practice (1995-2014)</b>	<b>10 hours</b>
<ul style="list-style-type: none"><li>• Practice of past examination papers from 1995 to 2014 relevant to <b>6CH02: Application of core principles of chemistry</b><ul style="list-style-type: none"><li>✓ At least 10 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 papers practice can be extended by solving 6CH02 style questions from other exam boards.</li></ul></li></ul>	<b>10 hours</b>