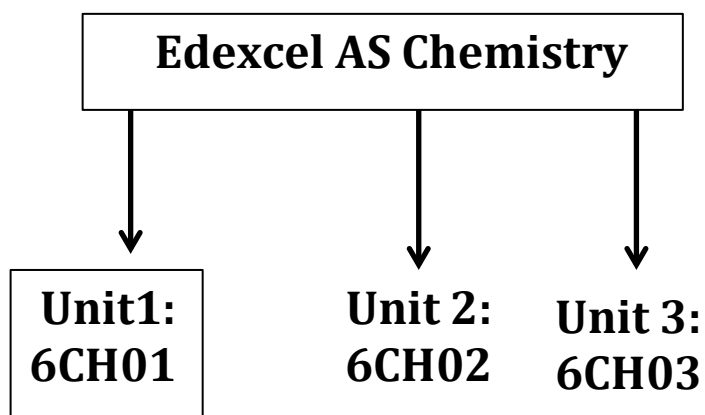
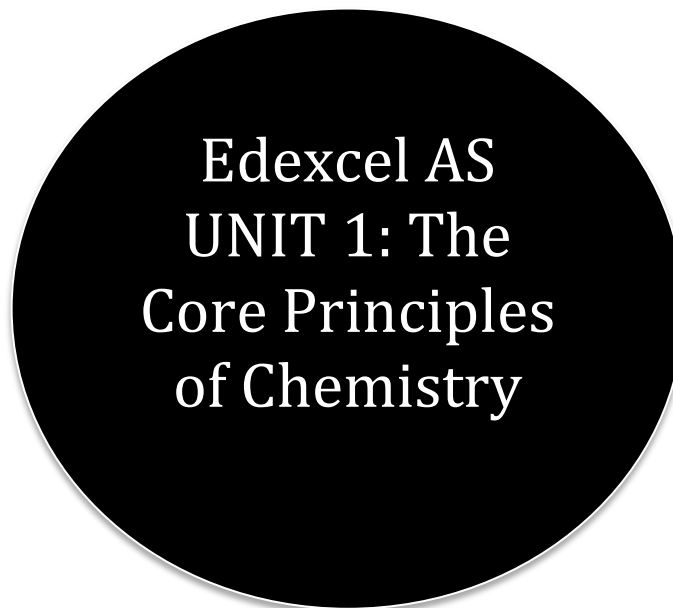


Edexcel AS GCE Chemistry (8CH01)

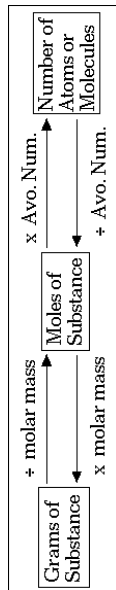
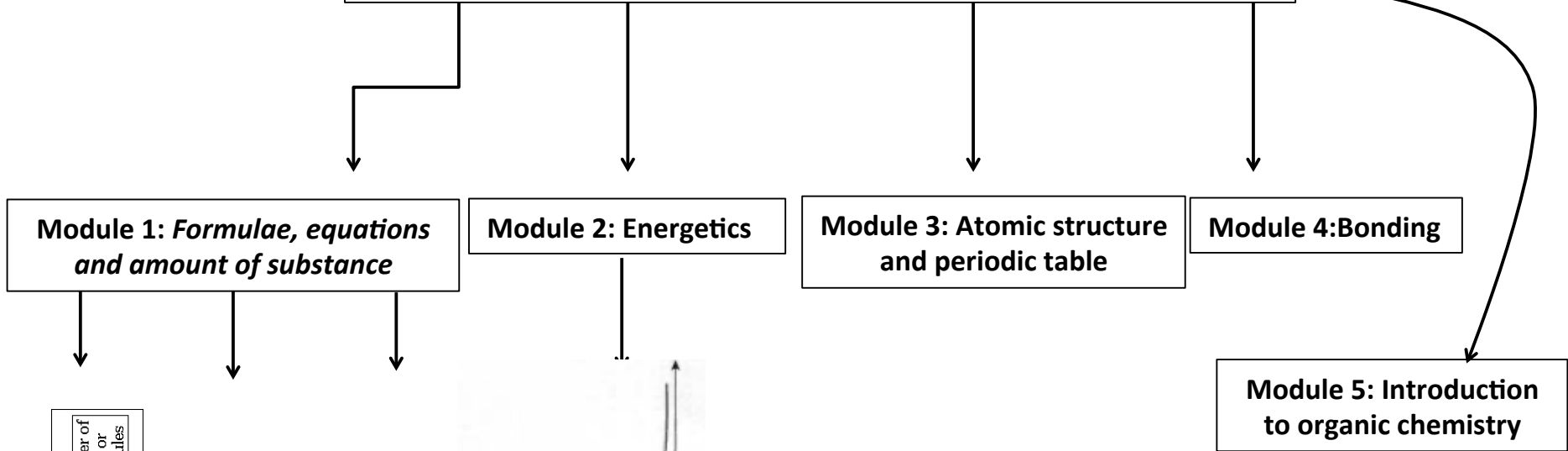


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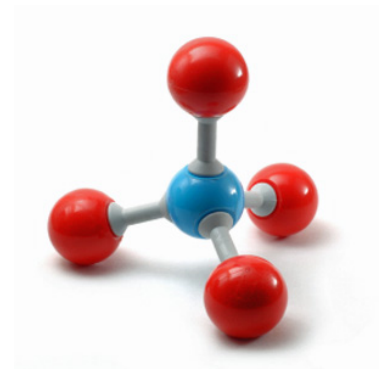
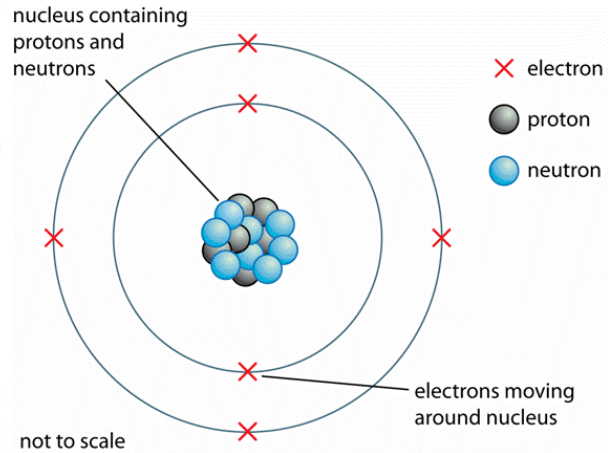
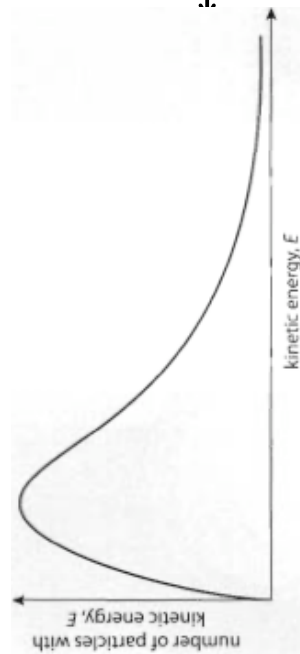
| Unit 6CH01: The Core Principles of Chemistry | Paper code: 6CH01 QP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------------------|------------------------------------|-------------------------------|------------------------------------|----------|--|----|----------|--|----|----------|---|----|----------|---|----|----------|---|----|----------|---|----|----------|---|----|----------|---|----|----------|---|----|----------|---|----|-------------|---|----|----------|---|----|-------------|---|----|----------|---|---|
| 1. Exam paper- Unit 1: The Core Principles of Chemistry 6CH01 Friday 22 nd May 2015 (Morning) | 20 % of Advanced GCE Biology | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Overview of content | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ol style="list-style-type: none"> Module 1: Formulae, equations and amount of substance Module 2: Energetics Module 3: Atomic structure & periodic table Module 4: Bonding Module 5: Introductory organic chemistry. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Overview of assessment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ol style="list-style-type: none"> The unit is assessed through a 1-hour and 30 min examination paper set and marked by Edexcel. The total number of marks is 80 and contains Section A (MCQs) and Section B (mixture of short answer and extended answer questions). Grades A–E are available. Grades assessment by year: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <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 2009</td><td></td><td>53</td></tr> <tr><td>Jun 2009</td><td></td><td>57</td></tr> <tr><td>Jan 2010</td><td>-</td><td>48</td></tr> <tr><td>Jun 2010</td><td>-</td><td>62</td></tr> <tr><td>Jan 2011</td><td>-</td><td>55</td></tr> <tr><td>Jun 2011</td><td>-</td><td>61</td></tr> <tr><td>Jan 2012</td><td>-</td><td>54</td></tr> <tr><td>Jun 2012</td><td>-</td><td>66</td></tr> <tr><td>Jan 2013</td><td>-</td><td>53</td></tr> <tr><td>Jun 2013</td><td>-</td><td>59</td></tr> <tr><td>Jun 2013 -R</td><td>-</td><td>59</td></tr> <tr><td>Jun 2014</td><td>-</td><td>66</td></tr> <tr><td>Jun 2014 -R</td><td>-</td><td>66</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 2009 | | 53 | Jun 2009 | | 57 | Jan 2010 | - | 48 | Jun 2010 | - | 62 | Jan 2011 | - | 55 | Jun 2011 | - | 61 | Jan 2012 | - | 54 | Jun 2012 | - | 66 | Jan 2013 | - | 53 | Jun 2013 | - | 59 | Jun 2013 -R | - | 59 | Jun 2014 | - | 66 | Jun 2014 -R | - | 66 | Jun 2015 | ? | ? |
| Year | Raw Marks to 90 % UMS - A* | Raw Marks to 80 % UMS grade 'A' | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Jan 2009 | | 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Jun 2013 | - | 59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Jun 2013 -R | - | 59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Edexcel AS GCE Chemistry

AS unit 6CH01: The Core Principles of Chemistry



$$N_A = 6.02 \times 10^{23}$$

How BioChem Tuition prepares their students for 6CH01: The Core Principles of Chemistry?

BioChem Tuition has a three-pronged strategy to prepare students for 6CH01 with the aim of obtaining grade A or A*.

1. **Detailed 6CH01 knowledge:** The students will study the specification of Edexcel 6CH01 alongside extensive practice of examination style questions to help them retain the content of the specification and practice exam technique. The students will receive detailed 6CH01 notes covering all the topics by BioChem Tuition. This is accompanied by rigorous practice of examination style questions to gauge the student's understanding of the topic.

Key features

- ✓ 6CH01 specification notes.
 - ✓ 6CH01 examination style past examination questions.
 - ✓ 1-2-1 help in understanding the key examiner points.
 - ✓ Notes and charts to aid revision.
2. **Practice Edexcel past examination papers (1995-2013):** The students will complete at least 10 years of Edexcel past exam papers. This includes relevant questions from old specification as well as whole papers from current syllabus. BioChem Tuition will provide all the past papers in printed form to the students. The students are required to complete past papers, which are checked and marked in light of the official examiner report and mark scheme. Any mistakes will be followed up to ensure they 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 6CH01 style questions from AQA, CIE and Edexcel exam boards.
3. **Mock examination practice:** Mock 6CH01 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.

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6CH01 Tuition Plan

| Tuition Plan for 6CH01: The Core Principles of Chemistry | |
|--|---------------------|
| Stage 1: Specification Topics | Tuition time |
| Module 1: <i>Formulae, equations and Moles</i> | 8 hours |
| 1.1 Formulae, equations and amounts of substance <ul style="list-style-type: none"> • Atom, ions, molecule, compound, empirical and molecular formula and ionic equations. • Atomic mass, molar mass, parts per million. • Concentration, moles, reacting masses, volume of gases, percentage yields, Avogadro's constant • Simple test tube reactions, reactions of acids titration, reactions and observations. | 4 hour |
| <ul style="list-style-type: none"> • Practice of past examination style questions on Formulae, equations and amounts of substance. | 4 hours |
| Module 2/3: <i>Energetics, Atomic structure</i> | 12 hours |
| 2.1 Energetics <ul style="list-style-type: none"> • Enthalpy change, exothermic and endothermic reactions, definitions of enthalpy changes, Hess's law, and energy changes in the combustion experiments. • Enthalpy changes in burning of spirit burner with alcohols and enthalpy changes in the decomposition of calcium carbonate using calcium carbonate and calcium oxide with hydrochloric acid. | 4 hours |

| | |
|---|----------------|
| <ul style="list-style-type: none"> Bond enthalpy and mean bond enthalpy, bond enthalpies in Hess cycle and relating bond enthalpies to ease of reaction. | |
| 2.1 Practice of past examination style questions on Energetics. | 4 hours |
| <p>Module 3: Atomic structure and the periodic table</p> <ul style="list-style-type: none"> Definition of relative atomic and isotopic mass. The knowledge of mass spectrometer to determine the relative isotopic composition, relative atomic mass of element and relative molecule mass of compound and also the uses of mass spectrometer. Ionisation energies, electron density plots for s and p orbitals, electronic configuration, and periodicity. | 2 hours |
| <ul style="list-style-type: none"> Practice of past examination style questions on Atomic structure and the periodic table. | 2 hours |
| Module 4: Bonding and organic chemistry | |
| <p>Module 4: Bonding</p> <ul style="list-style-type: none"> Ionic bonding– Evidence for the existence of ions, oxidation and reduction, dot & cross diagrams, giant ionic lattices, describe ionic bonding, trends in the ionic radii, polarization of anions and Born-Haber cycles. Covalent bonding– Describe covalent bonding, dot and cross diagrams and physical properties. Metallic bonding– describe metallic structure, properties of metals and the attractive force. | 4 hours |

| Module 5: Introduction to organic chemistry | 4 hours |
|---|----------------|
| <ul style="list-style-type: none">• Introduction – general formula, functional groups, IUPAC system of naming the compounds, Hazard and risk and procedures to minimize risk.• Alkanes – general formula, isomerization, cracking, reformation and fractional distillation, sustainability of fuels and free radical substitution reactions of alkanes and its mechanism.• Alkene – general formula, E-Z isomerism, cis-trans• Isomerism, addition reactions of alkenes, mechanism of electrophilic substitution of alkenes. | 4 hours |

| Past examination papers practice | 10 hours |
|---|-----------------|
| <ul style="list-style-type: none">• Practice of past examination papers from 1995 to 2014 relevant to 6CH01: The Core Principles of Chemistry.<ul style="list-style-type: none">✓ At least 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 solving 6CH01 style questions from other exam boards such as AQA, CIE and OCR can extend practice. | 10 hours |