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- 1. Atomic structure
- 2. Moles and formulae
- 3. Moles and equations
- 4. Shapes of molecules and ions
- 5. Bonding
- 6. Structure of elements and compounds
- 7. Moles and volumetric analysis
- 8. Energetics I Hess's law
- 9. Equilibrium and le Châtelier's principle
- 10. Kinetics I rates of Reaction
- 11. Oxidation and reduction 1
- 12. Periodicity trends in period 3
- 13. Groups 1 and 2
- 14. Group 7
- 15. Organic Chemistry I nomenclature
- 16. Organic Chemistry II reactions I
- 17. Organic Chemistry III reactions II
- 18. Applied chemistry

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- 19. The periodic table period 3
- 20. The periodic table group 4
- 21. Chemical equilibria: Kc
- 22. Chemical equilibria: Kp
- 23. How to answer questions on titration calculations
- 24. Laboratory chemistry: making observations and inferences
- 25. Acid-Base equilibria I pH, Kw and Ka
- 26. Acid Base equilibria II buffer Solutions, titrations & indicators
- 27. Organic Chemistry 1 key concepts and optical isomerism
- 28. Energetics lattice enthalpy and Born-Haber cycle
- 29. Answering questions on Born-Haber cycles
- 30. Laboratory chemistry separation & purification techniques
- 31. Organic chemistry 2 halogeno-compounds & Grignard reagents
- 32. Organic chemistry 3 carboxylic acids, esters & acyl chlorides
- 33. Organic chemistry 4 carbonyl compounds
- 34. Organic Chemistry 5 compounds containing nitrogen
- 35. Answering questions on organic pathways and conversions
- 36. Laboratory chemistry continuous practical assessment

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- 37. Redox equilibria 1: standard electrode potentials & cells
- 38. Transition metals 1: definitions & properties
- 39. Reactions of benzene & its compounds
- 40. Organic reaction mechanisms
- 41. Answering questions on electrochemical cells
- 42. Critical analysis of experimental procedures & accuracy
- 43. Rate equations, orders & constants
- 44. Rate expression orders & experimental procedures
- 45. Standard electrode potentials & feasibility of reactions
- 46. Transition metals 2 compounds & reactions
- 47. Answering questions on transition metals
- 48. Laboratory chemistry organic techniques
- 49. Rate orders & reaction mechanisms
- 50. Redox equilibria 3: applications
- 51. Redox equilibria 4: redox titrations
- 52. Reactions of functional groups: revision summary
- 53. Answering questions on organic synthesis
- 54. Organic analysis 1: infrared spectroscopy

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- 55. Organic analysis II: mass spectrometry
- 56. Maths for chemists I
- 57. Answering questions on redox titrations 1
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- 59. Titration calculations: revision summary
- 60. Laboratory chemistry: summary of organic tests
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- 62. Answering questions on identifying unkown organic compounds
- 63. Answering questions on identifying unkown inorganic compounds
- 64. Acid base III: buffer solutions, pH curves and dibasic acids
- 65. Calorimetry experiments
- 66. Maths for chemists 2
- 67. Whys students lose marks: AS redox questions
- 68. Periodic table: anomalies of first member of group
- 69. Revision summary: trends in the periodic table 1
- 70. Revision summary: trends in the periodic table 2
- 71. Revision summary: electronegativity, ionisation energies & electron affinities
- 72. Graphical techniques

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- 73. Reaction mechanisms revision summary
- 74. Ammonia and the Haber process
- 75. The chemistry of chromium
- 76. Polymers
- 77. The importance of hydrogen bonding
- 78. Recognising, constructing & interpreting redox reactions
- 79. Catalysts
- 80. The extraction of aluminium
- 81. UV and visible spectroscopy
- 82. Why students lose marks: AS energetics
- 83. The chemistry of copper
- 84. Free radical subsitution & polymerisation
- 85. Salt hydrolysis
- 86. Deprotonation (acid-base reactions)
- 87.  $\sigma$  and  $\pi$  bonds and the structure of benzene

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- 88. Disproportionation
- 89. The chemistry of aluminium
- 90. Complexes
- 91. Naming of organic compounds
- 92. Electrophilic addition
- 93. Isomerism in organic chemistry
- 94. Enthalpies of solution
- 95. Rearranging formulae
- 96. Relating the properties of crystal structures to structure and bonding
- 97. Oxidation and reduction in organic chemistry
- 98. Improve your mark: AS energetics
- 99. Why students lose marks: A2 acid base calculations
- 100. Organic functionality and structure part I (AS)
- 101. Organic functionality and structure part 2 (A2)
- 102. Improve your marks: A2 energetics- Born-Haber cycles

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- 103. Let EMMA do your mole calculations for you
- 104. A FEW H's will produce any half-equation
- 105. Logs and powers in chemistry
- 106. AS chemical bonding: intermolecular bonds
- 107. AS chemical bonding: intramolecular bonds
- 108. Amino acids and polypeptides
- 109. Cracking, reforming and isomerisation
- 110.  $\Delta G = \Delta H T \Delta S$
- 111. Oxyacids
- 112. Acid base reactions of transition metal complexes
- 113. High resolution NMR spectroscopy
- 114. Buffers: action and calculations
- 115. Polarimetry
- 116. The application of organic reactions to unfamiliar molecules (AS)
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- 118. Calculating pH changes during titrations
- 119. Molecular mass spectrometry : a summary
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- 123. The ideal gas equation
- 124. The Maxwell-Boltzmann distribution
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- 127. The Gibb's free energy change and spontaneity
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- 132. How an indicator works and how to choose it interactively

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- 133. Acylation
- 134. Factors affecting the rate of hydrolysis of haloalkanes
- 135. Using Grignard reagents in organic synthesis
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- 137. How science works: what do enthalpy of combustion of alcohols data tell us?
- 138. Industrial uses of transition elements and their compounds
- 139. Ligand exchange reactions
- 140. Metal extraction and recycling
- 141. Answering exam questions: rates of reaction
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- 148. Chiral compounds as medicines
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- 151. How to answer AS exam questions on atomic structure
- 152. How to answer questions on halogens
- 153. Amines
- 154. Chemistry of phenols
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- 156. Chromatography 1 : paper and thin-layer
- 157. How to answer questions on moles, molarity etc
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- 160. How to answer AS questions on kinetics
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- 166. The chemistry and benefits of catalysts
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- 185. Structure and function of DNA
- 186. Halogenation in organic chemistry
- 187. Avoidable errors in reaction mechanism questions
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