



Subject	Combined science		
Title/Topic	Format	Length	Date
Paper 1 – physical chemistry	Written paper	2:15	
Paper 2 – organic chemistry	Written paper	2:15	

My end of year assessment will test my knowledge on...

Both papers will contain a multiple-choice section which tests knowledge from a wide range of the course. The topics covered in the multiple-choice questions have not been included in the list of topics presented here, as such you must cover the whole course we have met in class if you hope to be successful. Additionally, both papers will test your ability to carry out calculations and work mathematically within the scope of chemistry, this includes but is not limited to the correct use of significant figures, decimal places, standard form, unit conversions and rearranging equations.

Paper 1

- Calculate enthalpy changes of reaction when given enthalpy changes of formation.
- Calculate pH for strong monobasic acids
- Carry out the calculations associated with an iodine/thiosulfate redox titration
- Comment on the link between K_p and temperature when given different equilibrium constants
- Comment on the relative first ionisation energies of elements.
- Comment on the units of an equilibrium constant.
- Compare standard entropy values of different substances.
- Compare the pH of strong and weak monobasic acids of the same concentration
- Construct overall reactions from half equations
- Determine orders, rate equation and rate constant using initial rates method
- Draw a diagram to show a cell set up to measure its standard cell potential
- Draw Boltzmann distributions and use them to demonstrate the effect of a catalyst
- Explain the shapes and bond angles of different small molecules.



- Identify the displacement reactions of the halogens and write ionic equations for those that occur.
- Plot an Arrhenius graph and use it to calculate E_a
- Recall and explain the trend in melting points across a period with respect to structure and bonding.
- Suggest why using a catalyst may benefit the environment.
- Use electrochemical series to predict and explain sequential reductions
- Use oxidation numbers to decide if species are oxidised or reduced
- Use the Gibb's free energy equation to decide if a reaction is feasible and to calculate minimum feasible temperature
- Use the K_a equation to calculate the mass of salt needed to produce a buffer of given pH
- Use the K_p equation and rearrange it to calculate partial pressures.

Paper 2

- Analyse a thin layer chromatogram
- Comment on issues and progress with polymer disposal e.g. when they contain chlorine
- Comment on the relative reactivities of benzene and its derivatives
- Define a functional group
- Describe how to obtain a pure sample of an organic liquid
- Draw 3D diagrams to represent enantiomers
- Draw a mechanism for the reduction of a carbonyl with NaBH_4
- Draw a nucleophilic substitution mechanism
- Draw an electrophilic substitution mechanism for benzene
- Draw and identify E/Z isomers
- Draw repeat units for addition and condensation polymers
- Identify the numbers of sigma and pi bonds in a molecule
- Identify the products of acid anhydrides reacting with alcohols and carboxylic acids
- Identify the products of alkene reactions
- Plan a synthesis for a target molecule and calculate the mass of starting material required given the % yield
- Provide evidence for the delocalised model of benzene

What should I do to revise and prepare for this assessment?



To prepare for this assessment:

- Review material covered in class by creating flash cards and mind maps for key information.
- Attempt summary questions and end of chapter and module questions from the text book.
- Use select past paper questions from the OCR Chemistry A website and mark these using the associated mark scheme.
- Begin your review early and seek help from your class teachers promptly if you need it!

What useful websites/resources could I use to help me prepare?

Text books, notes from class, revision guides!