

Organic Questions: AS 91391

This shows what has come up over the last 8 years. It might not be 100% comprehensive as many questions cover multiple ideas but will be a good start.

Content	2021	2020	2019	2018	2017	2016	2015	2014
Draw structural formula and give IUPAC (systematic) name	✓	✓	✓	✓	✓	✓	✓	✓
Identifying circled functional groups						✓	✓	
Enantiomers / optical isomers	✓	✓	✓	✓	✓	✓	✓	
Be able to draw enantiomers (3D)	✓	✓	✓	✓	✓	✓	✓	
Be able to distinguish between enantiomers	✓	✓	✓	✓	✓	✓	✓	
Be able to draw structural (constitutional) isomers			✓		✓		✓	
Classification of alcohol / haloalkane as 1°, 2° or 3°							✓	
Be able to identify types of reaction e.g. addition, substitution, elimination, condensation, oxidation, reduction, acid-base	✓	✓		✓	✓		✓	
Know that amines are basic; turn red litmus blue; and amides are neutral					✓	✓		✓
Know that esters are (often) sweet smelling	✓				✓			
Aldehyde / ketone; using Tollen's or Fehling's / Benedict's (and associated observations)	✓	✓	✓		✓	✓		✓
Colour changes / products when 1° or 2° alcohol or aldehyde is oxidised: heated with $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$			✓	✓	✓		✓	✓
Recall reaction of alkene with Br_2 water; as a test for unsaturation – and observations	✓	✓	✓				✓	
Recall the reaction of RCOOH with a carbonate or hydrogen carbonate (releasing CO_2)	✓	✓	✓	✓				✓
Recall vigorous reaction of RCOCl with H_2O ; HCl fumes	✓	✓	✓	✓		✓	✓	✓
Preparation of aldehydes from oxidation of 1° alcohols; why the need to distill off as formed	✓		✓		✓			
Acid hydrolysis of amide			✓					
Reaction flow scheme – fill in gaps	✓	✓	✓		✓	✓	✓	✓
Know the role of NaBH_4 in reduction of aldehydes and ketones; products made					✓	✓		
Know role of $\text{H}^+/\text{H}_2\text{O}$ with alkene; alkene to alcohol; predict major and minor product		✓						✓
Know role of $\text{KOH}(\text{alc})$; haloalkane to alkene; predict major and minor product			✓				✓	
Know role of $\text{KOH}(\text{aq})$; haloalkane to alcohol		✓	✓				✓	
Know role of conc $\text{NH}_3(\text{alc})$; haloalkane to amine			✓		✓		✓	✓

	2021	2020	2019	2018	2017	2016	2015	2014
Know addition reaction with alkene e.g. HCl; predict major and minor product			✓		✓			
Know elimination reaction with alcohol and conc H ₂ SO ₄ and predict major and minor product				✓	✓			✓
Know oxidation of alkene by KMnO ₄ to form a diol			✓					
Know reaction between RCOCl and R'NH ₂ to make an amide						✓	✓	✓
Know role of SOCl ₂ (or PCl ₅); convert ROH to RCl or RCOOH to ROCl		✓	✓				✓	✓
Draw /name ester formed from supplied RCOOH or ROCl and R'OH (RCOOH and R'OH needs conc. H ₂ SO ₄ and heat)				✓	✓	✓	✓	✓
Recognise requirements for molecule to show cis/trans (geometrical) isomerism	✓		✓					✓
Polymer: draw a section of polyamide from supplied monomers			✓				✓	
Polymer: draw possible monomers from section of polyamide/ peptide		✓			✓			✓
Polymer: draw a section of polyester from supplied monomer(s)				✓				
Explain why a reaction is referred to as / identify a condensation reaction		✓	✓	✓	✓	✓	✓	
Triglyceride; circling the ester group		✓	✓			✓	✓	✓
Draw a triglyceride		✓						
Triglyceride; compare and contrast products of acidic and/or basic hydrolysis		✓	✓			✓	✓	✓
Ester/Polyester; products of acidic and/or basic hydrolysis	✓					✓		
Peptides; circling the amide (peptide) bond		✓		✓	✓			
Drawing 2 possible dipeptides formed from 2 different amino acids	✓	✓			✓	✓		
Dipeptide; products of acidic and/or basic hydrolysis		✓		✓		✓		
Polyamide; products of acidic and/or basic hydrolysis					✓		✓	✓
Devise a reaction scheme e.g. butanone to butan-2,3-dione, or butanal to butanone, butan-1-ol to butan-2-one, propanone to ethyl propanoate	✓	✓	✓	✓		✓		
Know what is meant by 'reagents' and 'conditions'	✓	✓	✓	✓	✓	✓	✓	✓
Identify reflux apparatus / explain purpose of heating under reflux	✓			✓			✓	
Identify distillation apparatus / explain purpose of distillation	✓		✓	✓				✓
Role of ___ carbonate / hydrogen carbonate in organic synthesis								✓
Role of anhydrous ____ in organic synthesis								✓

Spare rows for any that have been missed.