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Set / Manage Tests A Level Chemistry Revision Test 2 Preview

Organic Chemistry

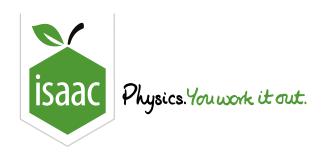
Organic Chemistry

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1. How many π electrons are present in benzene?					
8					
<u> </u>					
<u> </u>					
6					
2. What type of polymerisation is used in the industrial production of poly(ethene), usu or polyethylene, from ethene?	ally known as polythene				
Condensation polymerisation					
Addition polymerisation					
lonic polymerisation					
Ring-opening polymerisation					
3. What is the typical by-product in condensation polymerisation reactions?					
Water					
Hydrogen gas					
Carbon dioxide					
Ammonia					
4. Which of these techniques is most useful for identifying the functional groups present	nt in an organic molecule?				
NMR spectroscopy					
IR spectroscopy					
Thin Layer Chromatography (TLC)					

Mass spectrometry		
5. In proton NMR spectroscopy, what does a doublet signal usually indicate about a proton?		
Not being split at all		
Being split by three protons		
Being split by two protons		
Being split by one proton		
6. Which of the following is NOT a recognised type of isomerism in organic chemistry?		
Optical isomerism		
Electronic isomerism		
Geometric isomerism		
Structural isomerism		
7. What is the primary difference between optical isomers?		
Have different densities		
Boil at different temperatures		
Have different molar masses		
Rotate plane-polarised light in opposite directions		
8. Which of the following compounds will exhibit cis-trans isomerism?		
1-chloroprop-1-ene		
1-chloro-2-bromopropane		
Ethene		
1-chloro-2-methylprop-1-ene		
9. Which of the following is a term used to describe one of a pair of molecules which are non-superimposable		
mirror images?		
Racemate		
Diastereomer		
Asymmetrer		
Enantiomer		

10.	In th	ne acid-catalysed hydration of alkenes, what is the key intermediate formed?
		A free radical
		An alkane
		A carbocation
		A carbanion
11.	Wh	y does benzene, unlike alkenes, resist electrophilic addition reactions?
		Because benzene experiences an additional stabilisation energy due to its aromaticity.
		Because benzene does not contain any π bonding.
		Because benzene can only act as an electrophile, not a nucleophile.
		Because benzene has a much lower electron density.
12.	Wha	at is the product formed when propanone reacts with $ m NaBH_4$?
		Propan-1-ol
		Propene
		Propane
		Propan-2-ol
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Home Set / Manage Tests A Level Chemistry Revision Test 2 Preview Stoichiometry

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13	. How many moles of water are produced when $16\mathrm{g}$ of methane undergo complete c	ombustion?
	2.0 mol	
	$3.0\mathrm{mol}$	
	1.0 mol	
	\bigcirc 4.0 mol	
14	. How many grams of ${ m O_2}$ are required to completely combust $10{ m g}$ of propane?	
	ho 36 g	
	① 10 g	
	○ 16 g	
	18 g	
15	. What is likely to be the empirical formula of an organic compound containing 40% c	carbon and 53% oxygen
	by mass, assuming the only other element it contains is hydrogen? CHO	
	CH ₄ O	
	\bigcirc CH $_2$ O	
	$ m C_2H_6O_3$	
16	. $5.0 m g$ of calcium carbonate are added to $65 m cm^3$ of $1.5 m moldm^{-3}$ hydrochloric acid a chloride are isolated from the solution. What is the percentage yield of calcium chlorical	_
	90 %	
	$\bigcirc 46\%$	
	92 %	

$\bigcirc 100\%$
17. In the reaction $A+2B\longrightarrow C$, if $3.0\mathrm{mol}$ of A and $4.0\mathrm{mol}$ of B are used, which is the limiting reagent?
Both A and B.
B is the limiting reagent.
A is the limiting reagent.
Neither A nor B
18. In a titration, $25.0\mathrm{cm^3}$ of $0.150\mathrm{moldm^{-3}}$ acid is neutralised by $30.0\mathrm{cm^3}$ of a sodium hydroxide solution. If the acid is diprotic, what is the concentration of the sodium hydroxide solution?
$ ho 0.200\mathrm{moldm^{-3}}$
$ ho 0.125 m moldm^{-3}$
$ ho 0.250 m moldm^{-3}$
$ ho 0.150 m moldm^{-3}$
32 g 16 g 36 g 18 g
20. Calculate the mass of $CaCl_2$ needed to prepare $500.0\mathrm{cm^3}$ of a $0.250\mathrm{moldm^{-3}}$ solution.
ho 27.8 g
\bigcirc 13.9 g
$\bigcirc 111.2\mathrm{g}$
\bigcirc 55.6 g
21. If $100\mathrm{g}$ of $\mathrm{CaCO_3}$ is heated and fully decomposes, what (approximately) is the volume of gas produced at RTP?
$ ho$ 12 dm 3
$ ho$ 30 $ m dm^3$

	ho 48 dm ³
	$ ho$ 24 dm 3
22.	In a controlled combustion experiment, $5.00\mathrm{g}$ of hydrogen gas reacted with excess chlorine to form hydrogen chloride, with the conditions remaining constant throughout. The temperature was held at $50^\circ\mathrm{C}$ while the pressure remained at $2.5\times10^5\mathrm{Pa}$. Calculate the volume of hydrogen chloride that was produced under these conditions, assuming it can be modelled as an ideal gas.
	$54\mathrm{dm^3}$
	$ ho$ 60 dm 3
	$ ho$ 27 dm 3
	$ ho$ 120 dm 3
23.	Which of the following statements about atom economy is correct?
	Atom economy can take negative values.
	An addition reaction producing a desirable product has an atom economy of 100% .
	Atom economy is calculated by dividing the mass of all by-products by the mass of all reactants.
	If a reaction has an atom economy of 50% , it means that half of the molecules formed are useful products.
24.	A student has calculated the percentage yield of a reaction producing X and obtained an answer of 110% . Which of the following is NOT usually a possible explanation?
	The conditions were not controlled leading to an incorrect quantification of X (e.g. X quantified by gas volume not accounting for a change in temperature).
	The product sample was still contaminated with solvent.
	The student carried out the percentage yield calculation incorrectly.
	The amount of X formed is greater than the theoretical amount possible based on the limiting reagent quantity
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