

## **Past Papers Standard Grade** Jeneral Chemistry Z006**Marking Sche**

2006	K	U	PS		
General	/30	%	/30	%	
3	20+	67%	24+	80%	
4	15+	50%	20+	67%	
5	12+	40%	18+	60%	
7	<12	<b>&lt;40%</b>	<18	<60%	

2	006 Stan	dard	Gra	ide Chei	nistry	Genera	I Mo	arkin	g So	cher	ne	
Question	Answer	Chemistry Covered										
		Answer		A	В	C		D			F	
1a	А	Element		potassium	gold	magnesium			zinc		calciu	Jm
		Syr	nbol	K	Au	Mg		Cu		Zn		
		Answer		A	В	С		D		E		
1b	С	Element		potassium	gold	magnesium	۲ co	copper		zinc		Jm
		Date of Discovery		1807	ancient	1775 (old data booklet)	an	ancient		ancient		8
1c	E	Galva	Galvanising: coating iron in zinc so zinc protects iron by sacrificial protection									ion
		Ans	swer	A	В	С		D		E		
1d	F	Elei	ment	potassium	gold	magnesium	۱ cc	opper	zinc		calciu	JM
	•	Flame	: Colour	lilac	not listed in data booklet	not listed in data booklet	blue	blue-green		ted in ooklet	orange	-red
				Fair Test	Fair Test			В		E		
2	B+E Both for 1 mark	[	Facto	r which is cl	nanging:	Temperat				: 40° <i>C</i>		
2		Facto		rs kept cons	stant:	Particle S	ize	ze powo		der pow		
			Tuero		Ji Carri	Concentra	tion	1mo	I/l	1mo	ol/l	
2	B+D Both for 1 mark		Answer	A	В	С		D		E	F	
За			drocarbo ogous So					pentane <b>alkane</b>		pentene alkene		ene ne
3b	В	-		is cracked and								
	0		Answer	A	B	С		D		E	F	
3c	С	Hy	drocarbo		e methar	ne hexen	2	pentane	pei	ntene	prope	ene
			Boiling Point (°C)         -6         -162         63         36         30         -48								5	
4	С	NEB A	<ul> <li>A Dilution of acids with water raises the pH of acid up to pH=7</li> <li>B All solutions become less concentrated/more dilute when water is added</li> <li>C Acids have a pH below pH=7 and diluting the acid raises the pH up to pH=7</li> <li>Adding water to acids dilutes them and raises the pH up to pH=7</li> </ul>									
5α	В		Two different metals in a cell will produce a voltage. The same metal attached to itself in a cell gives zero voltage.									
5b	D	Magr	nesium	and copper mical serie	r are furt	hest apart	com	binatio	n of n	netals		
6a	A	Ar	nswer	A	В	С		D		2	F	
6b	E	_	cription	pure element	mixture of elements		со	pure mpound	рс	ire bound	mixture compou	
6c	A+B		rpe of lecule	no molecules present	no molecule present	s penta-atom molecules		ra-atomic plecules		omic cules	mixture molecu	
	Both for 1 mark	<u> </u>										
7α	E	A: respiration: $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ B: fermentation: $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$										
7b	D	C: filtration: separating residue (insoluble solid) in filter paper from filtrate (solution) D: photosynthesis: $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$										
7c	A,B 1 mark each	E: distillation: separation of two liquids with different boiling points F: cracking: breaking larger hydrocarbons into smaller, more useful hydrocarbons										
8	A,D 1 mark each	<ul> <li>☑A metals e.g. copper conduct electricity in the solid state</li> <li>☑B glucose is covalent. Covalent solutions do not conduct electricity</li> <li>☑C sulphur is a non-metal and covalent substances do not conduct electricity.</li> <li>☑D ionic chloride is an ionic solution. Ionic solutions conduct electricity.</li> </ul>										



Question	Answer	Chemistry Covered								
•	turns	Gas Hydrogen				Oxygen Carbon Dioxide				
9a	lime water milky						: lime water milk	у		
9b	less time taken	Smaller particle size after crushing makes reaction faster, making gas pressure inside tub increase faster								
9c	C6H8O6	2	Problem Solving Question							
10a	nucleus	nua	nucleus is positively charged because it contains positive protons and neutral neutrons							
10b(i)		Electrons will form 4 pairs of electron in outer shell of neon to give electron arrangement 2,8								
			Group	<b>1</b>	7	0	)	Between Groups		
10b(ii)	noble gases		Name	e alkali metal	s haloge	ens noble g	gases	2+3 transition metals		
11a	It will run out	fin	ite means	s it will eventu	ally run c	out sometime	e in fu	iture		
11b(i)	$\frac{1}{2}$ -organisms die + fall to bottom of sea $\frac{1}{2}$ -organisms get covered up by sand $\frac{1}{2}$ -layers of rock increase pressure $\frac{1}{2}$ -millions of years later turns into oil	StepHow Coal is MadeHow Crude Oil is Made1Dead trees fall to bottom of swampDead sea organisms fall to bottom of se2Materials get covered up by mudMaterials get covered up by sand3Layers of rock above provide pressureLayers of rock above provide pressure4Over millions of years turns into coalOver millions of years turns into crude								
11b(ii)	Residue	Re	sidue is t	he heaviest fi	raction fr	om crude oil				
11c	poisonous SO2 formed or acid rain will be formed	Su	Sulphur in coal burns to form SO2							
12a	bar chart showing:	½mark½mark1markvertical scalecorrect labelling of barsbars drawn correctly								
12b(i)	potassium or phosphorus	Fertilisers are soluble compounds which contain at least one of: Nitrogen, Potassium and/or Phosphorus								
12b(ii)	solubility	All	nitrates	are soluble ar	nd fertilis	ers must be	solub	ole		
12c	root nodules	Nitrifying bacteria in Root Nodules of Leguminous plants like pea family plants, bean family plants and clover contain the ability to fix atmospheric nitrogen into nitrate compounds.								
13a	lead, nitrogen and oxygen	Ending       Meaning         -ide       2 elements in compound         -ate       2 elements in compound + oxygen         -ite       2 elements in compound + oxygen				<b>Example</b> Copper sulphide = copper + sulphur Copper sulphate = copper + sulphur + oxygen Sodium sulphite = sodium + sulphur + oxygen				
13b(i)	lead iodide	lead nitrate potassium iodide potassium nitrate lead iodide solution solution (precipitate)								
13b(ii)	Filtration	Insoluble solid precipitates are removed from solution by filtering. The precipitate is the residue which collects in the filter paper and the solution is the filtrate that goes through the filter paper.								
14a	medium or slow	Reactivity of halogens decreases down group 7.								
14b(i)	C4H8	Butene H H H H H H H H H H H H H H H H H H								



decolourised					uicniy m	The presen		of C=C double	
	bonds. This indicated the substance being tested is unsaturated.								
				Gas	U	se			
	helium				airs	airship			
Table showing:				neon	advertis	ing signs			
, and the second s				argon					
				krypton	las	ers			
atomic size increases	As the atomic number increases the atomic size increases.						ises.		
hydrogen is flammable	e Hydrogen burns violently to form water, helium does not b					ot burn.			
ammonia		0							
nitrogen monoxide									
oxygen	Problem Solving: transfer of information from passage to						e to flow chart		
sulphuric acid									
		ix	mono-	di-		tri-		tetra-	
NO <sub>2</sub>			1		2	3	• •	4	
			bon monoxide	carbon	dioxide	sulphur triox	rioxide carbon tetrachlor		
non-biodegradable or does not rust or will last longer	Plastic will last longer as it does not break down and will not rust.								
not occurring in nature or man-made	All plastics are man-made/synthetic								
gases produced	Poisor	nous Gas	Carbon mo	noxide	hydrod	gen cyanide	hy	drogen chloride	
are poisonous	Source burning plastics burning polyurethane						burning PVC		
A	lowest	lowest pH $\therefore$ most acidic $\therefore$ most ions present $\therefore$ highest current will flow							
5-15	must	be belo	w 20						
		volun	ne of acid	vol	tage	type of	f elec	ctrode	
one from:									
• • • • • • •	depth of solution same size beaker size of electrodes								
to complete circuit	elect	rolyte r	nust be an i	onic/sa	lt solutio	on			
	silver	is high	er up elect	rochem	ical serie	es than gold	lso	electrons flow	
SIIVER then GOID		•	•			•			
Alloys									
silver (5%)					•				
Copper (20%) Gold (75%)	Bigge Small	st sect est sec	or must be tor must be	gold e silver		g 20% is co	pper	•	
	hydrogen is flammable ammonia nitrogen monoxide oxygen sulphuric acid NO2 non-biodegradable or does not rust or will last longer not occurring in nature or man-made gases produced are poisonous A 5-15 one from: to complete circuit silver then gold Alloys silver (5%) copper (20%) Gold	atomic size increases       As the         hydrogen is flammable       Hydrogen         ammonia       Hydrogen         nitrogen monoxide       Problem         oxygen       Problem         sulphuric acid       Prefine         NO2       Prefine         non-biodegradable or does       Plasti         not rust or will last longer       Plasti         not occurring in nature       All plasti         gases produced       Poisor         gases produced       Poisor         are poisonous       Social         A       Iowest         5-15       must         one from:       I         to complete circuit       electricuit         silver       then       gold         Alloys       Mixture         silver (5%)       Gold	atomic size increases       As the atom         hydrogen is flammable       Hydrogen bu         ammonia       Hydrogen bu         nitrogen monoxide       Problem Solution         oxygen       Problem Solution         sulphuric acid       Prefix         NO2       Meaning         non-biodegradable or does       Plastic will log         not occurring in nature       Plastic will log         or man-made       Poisonous Gas         gases produced       Poisonous Gas         gases produced       Poisonous Gas         one from:       Volun         to complete circuit       electrolyte r         silver then gold       Silver is high         from the hig       Mixtures of         silver (5%)       Gold 75% an         Biggest sect       Smallest sec	atomic size increases       As the atomic number in         hydrogen is flammable       Hydrogen burns violentl         ammonia       nitrogen monoxide         oxygen       Problem Solving: transference         sulphuric acid       Prefix mono-         NO2       Prefix carbon monoxide         non-biodegradable or does       Plastic will last longer at         non-biodegradable or does       Plastic will last longer at         not occurring in nature       All plastics are man-made         gases produced       Poisonous Gas       Carbon mo         are poisonous       Poisonous Gas       Carbon mo         A       lowest pH .: most acidic .:       5-15         must be below 20       volume of acid       temperature of acid         one from:       volume of acid       temperature of acid         isilver then       gold       Silver is higher up elect         from the higher metal (       Alloys       Mixtures of metals are         silver (5%)       Gold 75% and Silver is 5       Biggest sector must be         Medium sector must be       Medium sector must be       Medium sector must be	Table showing:       neon         argon       krypton         atomic size increases       As the atomic number increase         hydrogen is flammable       Hydrogen burns violently to for         ammonia       nitrogen monoxide         oxygen       Problem Solving: transfer of in         sulphuric acid       Prefix       mono-         NO2       Meaning       1         non-biodegradable or does       Plastic will last longer as it doe         not occurring in nature       Plastic will last longer as it doe         not occurring in nature       All plastics are man-made/synt         gases produced       Poisonous Gas       Carbon monoxide         source       burning plastics         A       lowest pH :: most acidic :: most id         one from:       volume of acid       vol         to complete circuit       electrolyte must be an ionic/sa         silver       thigher up electrochem         from the higher metal (silver)       Alloys         Mixtures of metals are called of       Silver is 5% :: in         Biggest sector must be gold       Smallest sector must be silver         Medium sector must be copper       Medium sector must be copper	Table showing:       neon       advertis         argon       light         krypton       las         atomic size increases       As the atomic number increases and the informatic increases and the informatic increases and the informatic increases not rust or will last longer         non-biodegradable or does not rust or will last longer       Plastic will last longer as it does not brow increases and the informatic increases and the informatic increases increases increases and the informatic increases and the informatic increases and the informatic increases increases increases increases increases and the informatic increases and the informatic increases increases increase	Table showing:       neon       advertising signs argon       light bulbs krypton         atomic size increases       As the atomic number increases the atomic size in hydrogen is flammable       Hydrogen burns violently to form water, helium do ammonia         nitrogen monoxide oxygen       Problem Solving: transfer of information from pass oxygen         sulphuric acid       Prefix       mono- Meaning       di- 1       tri- Meaning         NO2       Prefix       mono- Meaning       1       2       3         non-biodegradable or does not rust or will last longer       Plastic will last longer as it does not break down ar         not occurring in nature or man-made       All plastics are man-made/synthetic         gases produced are poisonous       Poisonous Gas       Carbon monoxide       hydrogen cyanide         Source       burning plastics       burning ployurethane         A       lowest pH :: most acidic :: most ions present :: highest         5-15       must be below 20         one from:       volume of acid       voltage       type of         silver then       gold       silver is higher up electrochemical series than gold from the higher metal (silver) to the lower metal (         Alloys       Mixtures of metals are called alloys       Silver (5%)       Gold 75% and Silver is 5% :: remaining 20% is co       Biggest sector must be gold	Table showing:       Image: argon ight bulbs iggs         atomic size increases       As the atomic number increases the atomic size increases hydrogen is flammable         hydrogen is flammable       Hydrogen burns violently to form water, helium does no ammonia         nitrogen monoxide       Problem Solving: transfer of information from passage         oxygen       Problem Solving: transfer of information from passage         sulphuric acid       Prefix mono- di- tri- Meaning 1 carbon monoxide carbon dioxide sulphur trioxide         non-biodegradable or does not rust or will last longer       Plastic will last longer as it does not break down and w         not occurring in nature or man-made       Plastics are man-made/synthetic         gases produced are poisonous       Poisonous Gas Carbon monoxide burning plastics burning polyurethane         A       lowest pH :: most acidic :: most ions present :: highest cur burning plastics         5-15       must be below 20         one from:       Volume of acid same power supply distance betweer depth of solution same size beaker         silver then gold       silver is higher up electrochemical series than gold so from the higher metal (silver) to the lower metal (gold Xilver is 5% :: remaining 20% is copper Biggest sector must be gold         Silver (5%)       Gold 75% and Silver is 5% :: remaining 20% is copper Biggest sector must be gold	

