Chemistry Paper 2

Question Number	Answer	Mark
1(a)	They would dissolve (in the water) (or words to that effect)	1

Question Number	Answer	Mark
1(b)	Two from: • Water rises up paper • Colours separate • new colours appear • dyes move up paper	2

Question Number	Answer	Mark
1(c)(i)	3.5cm	1

Question Number	Answer	Mark
1(c)(ii)	Q and R	1

Question Number	Answer	Mark
1(c)(iii)	Use another liquid / organic solvent / use longer paper	1

Question Number	Answer	Mark
2(a)	X - dilute hydrochloric acid / HCl Y - limestone / calcium carbonate / marble / $CaCO_3$	2

Question Number	Answer	Mark
2(b)	In a syringe / by downward delivery or ecognizable diagram / by upward displacement of air	1

Question Number	Answer	Mark
2(c)(i)	Yellow / orange - not red	1

Question Number	Answer	Mark
2(c)(ii)	Carbonic (acid) H_2CO_3	2

Question Number	Answer	Mark
2(d)	Ionic covalent	2

Question Number	Answer	Mark
2(e)	Carbonating drinks / fizzy drinks / fire extinguishers / dry ice	1

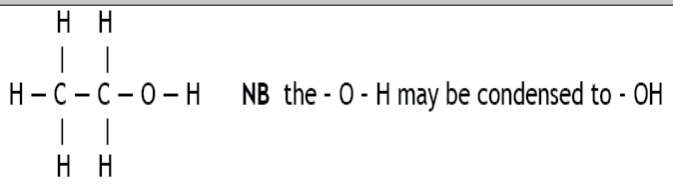
Question Number	Answer	Mark
2(f)	Amount / percentage too small (any stated % under 1 %)	1

Question Number	Answer	Mark
3(a)(i)	Fermentation Dehydration / Elimination of water	2

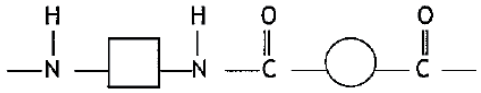
Question Number	Answer	Mark
3(a)(ii)	Addition	1

Question Number	Answer	Mark
3(b)	Any two for 1 mark each: (dissolved in) water yeast warm / stated temperature in range 20-35 °C	2

Question Number	Answer	Mark
3(c)	$C_2H_5OH \rightarrow C_2H_4 + H_2O$ Award 1 for correct formulae of ethanol and ethane and 1 for H_2O and no coefficients	2

Question Number	Answer	Mark
3(d)	 **NB** the - O - H may be condensed to - OH	1

Question Number	Answer	Mark
3(e)(i)	(di) amine (Allow animo)	1

Question Number	Answer	Mark
3(e)(ii)	alternating circle and square correct linkage between blocks (NH-CO- is minimum) two NH and CO groups in correct positions is minimum  must have 'continuation bonds' for 3rd mark **ALLOW** terminal COOH or NH_2 if brackets used round repeat unit	1 1 1

Question Number	Answer	Mark
3(f)	Low Weak molecules	3

Question Number	Answer	Mark
4(a)	2:3:2:2	1

Question Number	Answer	Mark
4(b)(i)	• Energy in = 2468 / correct working • Energy out = 2958 / or correct working • Energy change = - 490 (kJ/mol) (cq on above)	3

Question Number	Answer	Mark
4(b)(ii)	• Exo / endothermic diagram (cq on above) • ΔH AND vertical energy axis abeled • Reagents / products abeled (names or formulae)	3

Question Number	Answer	Mark
4(c)	• Pipette / burette to measure sulfuric acid • Sodium hydroxide in burette • Indicator used and colour change (NOT universal indicator) • Add sodium hydroxide gradually near end point (and swirl)	4

Question Number	Answer	Mark
5(a)(i)	(on diagram) – in left and + in right	1

Question Number	Answer	Mark
5(a)(ii)	H^+ Gains electrons (reject OH^- =0/2)	2

Question Number	Answer	Mark
5(a)(iii)	(on diagram) horizontal line in right-hand tube about halfway between hydrogen gas level and top of tube (explanation)(1) for same number of electrons in (i) and (ii) 2 moles / molecules of hydrogen formed for 1 mole / molecule of oxygen (2)	3

Question Number	Answer	Mark
5(b)(i)	0.2(0)	1

Question Number	Answer	Mark
5(b)(ii)	0.2 × 24 = 4.8 (dm^3)	2

Question Number	Answer	Mark
5(c)(i)	0.2(0)	1

Question Number	Answer	Mark
5(c)(ii)	0.2 × 32 =6.4 (g)	2

Question Number	Answer	Mark
6(a)	Both are sodium One carbonate One hydrogen carbonate	3

Question Number	Answer	Mark
6(b)(i)	Both Li and Sr give red flames Both carbonate and hydroxide turn UI blue	2

Question Number	Answer	Mark
6(b)(ii)	Add (nitric) acid - does not fizz	1