

TRIPLE CHEMISTRY

PAPER 1

Friday 27th May (am)

C1: ATOMIC STRUCTURE and the PERIODIC TABLE	specification	Rev Guide page
Atoms, elements and compounds	4111	12, 13, 14
Mixtures	4112	16, 17, 18
The development of the model of the atom	4113	19
Relative electrical charges of subatomic particles	4114	20
Size and mass of atoms	4115	12
Relative atomic mass	4116	12
The periodic table	4121	21, 22
Development of the periodic table	4122	21
Metals and non-metals	4123	23
Group 0	4124	26
Group 1	4125	24
Group 7	4126	25
Transition metals	413	23

C2: Bonding, Structure and Properties of Matter	specification	Rev Guide page
Chemical bonds	4211	
Ionic bonding	4212	28, 29
Ionic compounds	4213	30
Covalent bonding	4214	31
Metallic bonding	4215	35
The three states of matter	4221	36, 37
State symbols	4222	36, 37
Properties of ionic compounds	4223	30
Properties of small molecules	4224	32
Polymers	4225	33
Giant covalent structures	4226	33
Properties of metals and alloys	4227	35
Metals as conductors	4228	35
Diamond	4231	34
Graphite	4232	34
Graphene and Fullerenes	4233	34
Sizes of particles and their properties	4241	38, 39
Uses of nanoparticles	4242	38, 39

C3: Quantitative Chemistry	specification	Rev Guide page
Conservation of mass and balanced chemical equations	4311	43
Relative formula mass	4312	41
Mass changes when a reactant or a product is a gas	4313	43
Chemical measurements	4314	41-49
Moles	4321	42
Amounts of substances in equations	4322	44
Using moles to balance equations	4323	44
Limiting reactants	4324	45
Percentage yield	4331	49
Atom Economy	4332	48
Concentrations in solutions	434	47
Using amount of substance in relation to volumes of gases	435	46

C4 : Chemical Changes	specification	Rev Guide page
Metal oxides	4411	56
The reactivity series	4412	55
Extraction of metals and reduction	4413	56
Oxidation and reduction in terms of electrons	4414	57
Reactions of acids with metals	4421	54
Neutralisation of acids and salt production	4422	51
Soluble salts	4423	54
RP Making salts	4423	
The pH scale and neutralisation	4424	51
Titrations	4425	52
RP Titration	4425	
Strong and weak acids	4426	53
The process of electrolysis	4431	58
Electrolysis of molten ionic compounds	4432	58
Using electrolysis to extract metals	4433	58
Electrolysis of aqueous solutions	4434	59
Representation of reactions at electrodes as half equations	4435	59

C5 : Energy Changes	specification	Rev Guide page
Energy transfer during exothermic and endothermic reactions	4511	61, 62
RP Temperature change	4511	
Reaction profiles	4512	62
The energy change in reactions	4513	63
Cells and batteries	4521	64
Fuel Cells	4522	65

PAPER 2

Monday 20th June (am)

C6 : THE RATE AND EXTENT OF CHEMICAL CHANGE	specification	Rev Guide page
Calculating rates of reaction	4611	71
Factors which affect the rates of chemical change	4612	68
RP Rate of Reaction	4612	69, 70
Collision theory and activation energy	4613	67
Catalysts	4614	68
Reversible Reactions	4621	72
Energy changes and reversible reactions	4622	72
Equilibrium	4623	72
The effect of changing conditions on equilibrium	4624	73
The effect of changing concentration	4625	73
The effect of temperature changes on equilibrium	4626	73
The effect of pressure changes on equilibrium	4627	73

B7 : Organic Chemistry	specification	Rev Guide page
Crude oil, hydrocarbons and alkanes	4711	75, 77
Fractional distillation and petrochemicals	4712	76, 77
Properties of hydrocarbons	4713	77
Cracking and alkenes	4714	77, 78
Structure and formulae of alkenes	4721	79
Reactions of alkenes	4722	79
Alcohols	4723	81
Carboxylic Acids	4724	82
Addition polymerisation	4731	80
Condensation polymerisation	4732	83
Amino acids	4733	84
DNA and other naturally occurring polymers	4734	84

B8 : CHEMICAL ANALYSIS	specification	Rev Guide page
Pure substances	4811	86
Formulations	4812	86
Chromatography	4813	87
Test for hydrogen	4821	88
Test for oxygen	4822	88
Test for carbon dioxide	4823	88
Test for chlorine	4824	88
Flame tests	4831	89
Metal hydroxides	4832	89
Carbonates	4833	89
Halides	4834	89
Sulfates	4835	89
RP Identification of ions		
Instrumental Methods	4836	90
Flame emission spectroscopy	4837	90

C9 : CHEMISTRY OF THE ATMOSPHERE	specification	Rev Guide page
The proportions of different gases in the atmosphere	4911	91
The Earth's early atmosphere	4912	91
How oxygen increased	4913	91
Green house gases	4921	92
Human activities which contribute to an increase in greenhouse gases	4922	93
Global climate change	4923	92
The carbon footprint and its reduction	4924	93
Atmospheric pollutants from fuels	4931	94
Properties and effects of atmospheric pollutants	4932	94

C10 : USING THE EARTH'S RESOURCES	specification	Rev Guide page
Using the Earth's resources and sustainable development	41011	99, 100
Potable water	41012	102
Waste water treatment	41013	103
Alternative methods of extracting metals	41014	100
Life cycle assessment	41021	101
Ways of reducing the use of resources	41022	99
Corrosion and its prevention	41031	98
Alloys as useful materials	41032	97
Ceramics, polymers and composites	41033	96
The Haber process	41041	104
NPK fertilisers	41042	105