

OCR

*H232*

# Chemistry

This book is currently a *preliminary draft*.

It is probably full of errors, lies, paradoxes and communist propaganda.

Send corrections to <https://github.com/aDotInTheVoid/a-level-notes>.

Copyright © 2019 Nixon Enraght-Moony

[HTTPS://GITHUB.COM/ADOTINTHEVOID/A-LEVEL-NOTES](https://github.com/ADOTINTHEVOID/A-LEVEL-NOTES)

Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (the “License”). You may not use this file except in compliance with the License. You may obtain a copy of the License at <https://creativecommons.org/licenses/by-nc-sa/4.0/>. Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

*Compiled August 25, 2020*

# Contents

<b>I</b>	<b>ARCHIEVE START</b>	<b>5</b>
<b>II</b>	<b>Development of practical skills in chemistry</b>	<b>6</b>
1	Practical skills assessed in a written examination	7
2	Practical skills assessed in the practical endorsement	8
<b>III</b>	<b>Foundations in chemistry</b>	<b>9</b>
3	Atoms, compounds, molecules and equations	10
4	Amount of substance	11
5	Acid–base and redox reactions	12
6	Electrons, bonding and structure	13
<b>IV</b>	<b>Periodic table and energy</b>	<b>14</b>
7	The periodic table and periodicity	15
8	Group 2 and the halogens	16
9	Qualitative analysis	17
10	Enthalpy changes	18
11	Reaction rates and equilibrium (qualitative)	19
<b>V</b>	<b>Core organic chemistry</b>	<b>20</b>
12	Basic concepts	21
13	Hydrocarbons	22
14	Alcohols and haloalkanes	23
15	Organic synthesis	24
16	Analytical techniques (IR and MS)	25

**VI Physical chemistry and transition elements 26**

17 Reaction rates and equilibrium (quantitative)	27
18 pH and buffers	28
19 Enthalpy, entropy and free energy	29
20 Redox and electrode potentials	30
21 Transition elements	31

**VII Organic chemistry and analysis 32**

22 Aromatic compounds	33
23 Carbonyl compounds	34
24 Carboxylic acids and esters	35
25 Nitrogen compounds	36
26 Polymers	37
27 Organic synthesis	38
28 Chromatography and spectroscopy (NMR)	39

# I

## ARCHIEVE START

# II

## Development of practical skills in chemistry

---

<b>1</b>	<b>Practical skills assessed in a written examination</b>	<b>7</b>
<b>2</b>	<b>Practical skills assessed in the practical endorsement</b>	<b>8</b>

# 1

## **Practical skills assessed in a written examination**

## **2** Practical skills assessed in the practical endorsement



# III

## Foundations in chemistry

---

<b>3</b>	<b>Atoms, compounds, molecules and equations</b>	<b>10</b>
<b>4</b>	<b>Amount of substance</b>	<b>11</b>
<b>5</b>	<b>Acid–base and redox reactions</b>	<b>12</b>
<b>6</b>	<b>Electrons, bonding and structure</b>	<b>13</b>

# **3** Atoms, compounds, molecules and equations

# **4** Amount of substance

# **5** Acid–base and redox reactions

# 6

## Electrons, bonding and structure

# IV

## Periodic table and energy

---

<b>7</b>	<b>The periodic table and periodicity</b>	<b>15</b>
<b>8</b>	<b>Group 2 and the halogens</b>	<b>16</b>
<b>9</b>	<b>Qualitative analysis</b>	<b>17</b>
<b>10</b>	<b>Enthalpy changes</b>	<b>18</b>
<b>11</b>	<b>Reaction rates and equilibrium (qualitative)</b>	<b>19</b>

# 7 The periodic table and periodicity

## **8** Group 2 and the halogens



# 9 Qualitative analysis

# 10 Enthalpy changes

# **11**

## **Reaction rates and equilibrium (qualitative)**

# V

## Core organic chemistry

---

<b>12 Basic concepts</b>	<b>21</b>
<b>13 Hydrocarbons</b>	<b>22</b>
<b>14 Alcohols and haloalkanes</b>	<b>23</b>
<b>15 Organic synthesis</b>	<b>24</b>
<b>16 Analytical techniques (IR and MS)</b>	<b>25</b>

# 12

## Basic concepts

# 13 Hydrocarbons

# 14 Alcohols and haloalkanes

# 15 Organic synthesis



# 16

## Analytical techniques (IR and MS)

# VI

## Physical chemistry and transition elements

---

17 Reaction rates and equilibrium (quantitative)	27
18 pH and buffers	28
19 Enthalpy, entropy and free energy	29
20 Redox and electrode potentials	30
21 Transition elements	31

# 17

## **Reaction rates and equilibrium (quantitative)**

# 18 pH and buffers

# 19 Enthalpy, entropy and free energy

# 20 Redox and electrode potentials

# 21

## Transition elements

# VII

## Organic chemistry and analysis

---

<b>22 Aromatic compounds</b>	<b>33</b>
<b>23 Carbonyl compounds</b>	<b>34</b>
<b>24 Carboxylic acids and esters</b>	<b>35</b>
<b>25 Nitrogen compounds</b>	<b>36</b>
<b>26 Polymers</b>	<b>37</b>
<b>27 Organic synthesis</b>	<b>38</b>
<b>28 Chromatography and spectroscopy (NMR)</b>	<b>39</b>



## 22 Aromatic compounds

# 23 Carbonyl compounds

# 24

## Carboxylic acids and esters

# 25 Nitrogen compounds

# 26 Polymers

# 27 Organic synthesis

# **28** Chromatography and spectroscopy (NMR)