2020 Chemistry Paper Review

H. K. Association for Science & Mathematics Education
香港數理教育學會

Aug 22, 2020 (Sat)

BY BEN NG (HKASME ***www.hkasme.org***)
Email: bbng30@gmail.com
Tel: 2333 0096 /
Fax: 2333 7602

HKChO (2020-2021)

- Organized by HKASME

Theme

Chemistry of Nitrogen and its compounds

Date: Submission and Final Round (TBD...)

“Digi-Science” Video Production Competition for H.K. Sec Sch. 2020

- Organized by HKASME & HKCTC (香港檢測和認證局)

- Theme for 2020-2021 -- ???? (TBD…)

- Theme: ***Testing Science in Daily Life – Textile & Clothing (2019-20)*** 生活中的檢測科學 - 衣料篇***(2019-20)***

“Digi-Science” Video Production Competition for H.K. Sec School 2020

- Subject: Phy / Chem / Bio / Sci.
- Content: 2-min short film with expts.
- Students: Junior form & Senior form (2 Teams per school)

Teaching kit from HKCTC

Download Website

- http://www.hkctc.gov.hk/en/work.html#d (English version)
- http://www.hkctc.gov.hk/tc/work.html#d (Chinese version)

Teaching kit from HKCTC

六個與生活例子有關的實驗:

- 空氣中二氧化氮的測試
- 分析廢水的含銅量
- 以優化「莫尼 – 威廉」法測試乾糧中的二氧化硫含量
- 這乳製品安全嗎？使用金鈉米粒子「比色探針法」檢測三聚氰胺
- 使用快速試管化學測試法分辨中國草藥丹參與其他類似的草藥
- 以碘滴定法測試維他命商品和鮮榨果汁的維他命C含量

Coming HKASME Activities (NEW!!)

26, 28-31 Dec 2020, 2 Jan 2021

- HKDSE Chemistry & Physics Mock Exam (F. 6)
- 1 centre (CSWCSS)
- ~ 240 students per session
- Chem – 7 sessions
- Phy – 5 sessions.

Coming HKASME Activities

Special Arrangement for
In-School
Chemistry Mock Exam (NEW!!!)

Coming HKASME Activities (Cont')

Purchasing Chem Mock Exam Paper & carrying out the Mock Exam in your school

- Start to collect the papers from Jan 4, 2021 (Mon)
- Return the answered scripts on / or before Jan 11, 2021 (Mon)
- Include marking, issuing certificate
- Compare results with other participants

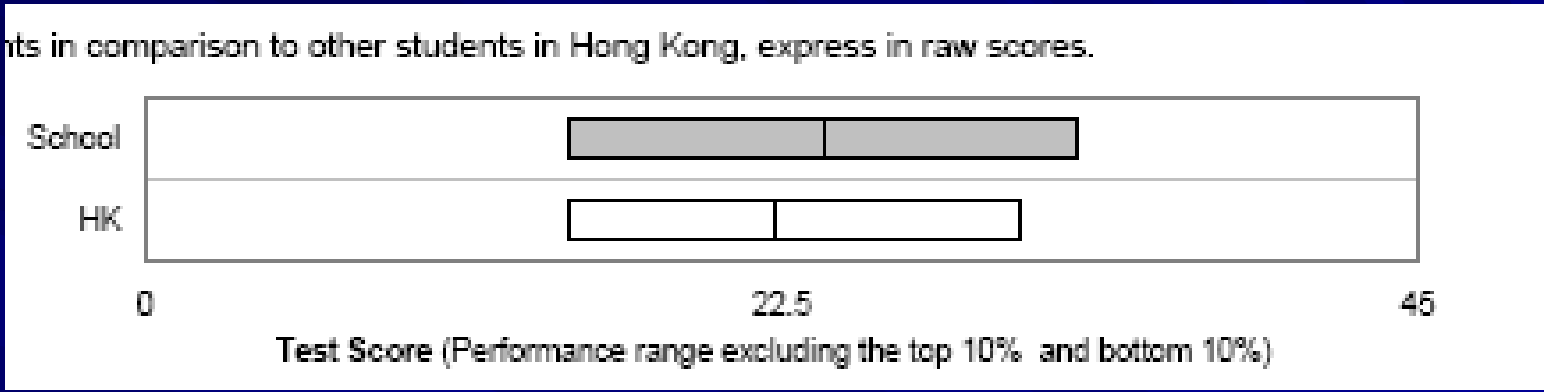
Coming HKASME Activities (Cont.)

End Feb, 2021

- **Release Chem / Phy Mock Exam Result**

- Hong Kong Biology Literacy Award (2020/2021) (F.3-6)
- (TBD)

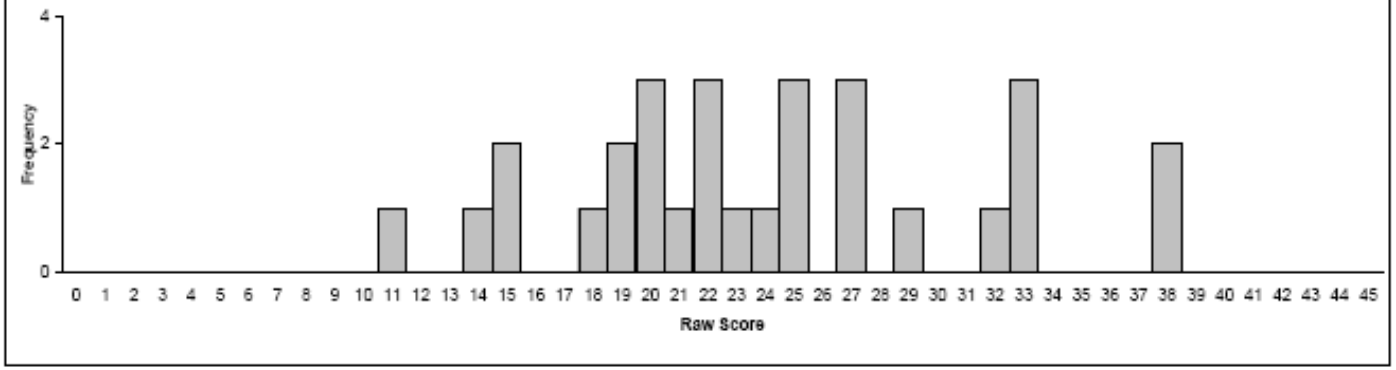
Mock Exam Report



School Score Vs HK Score

Mock Exam Report

45	0	0	29	100	100



Score distribution frequency

Mock Exam Report

Question Analysis

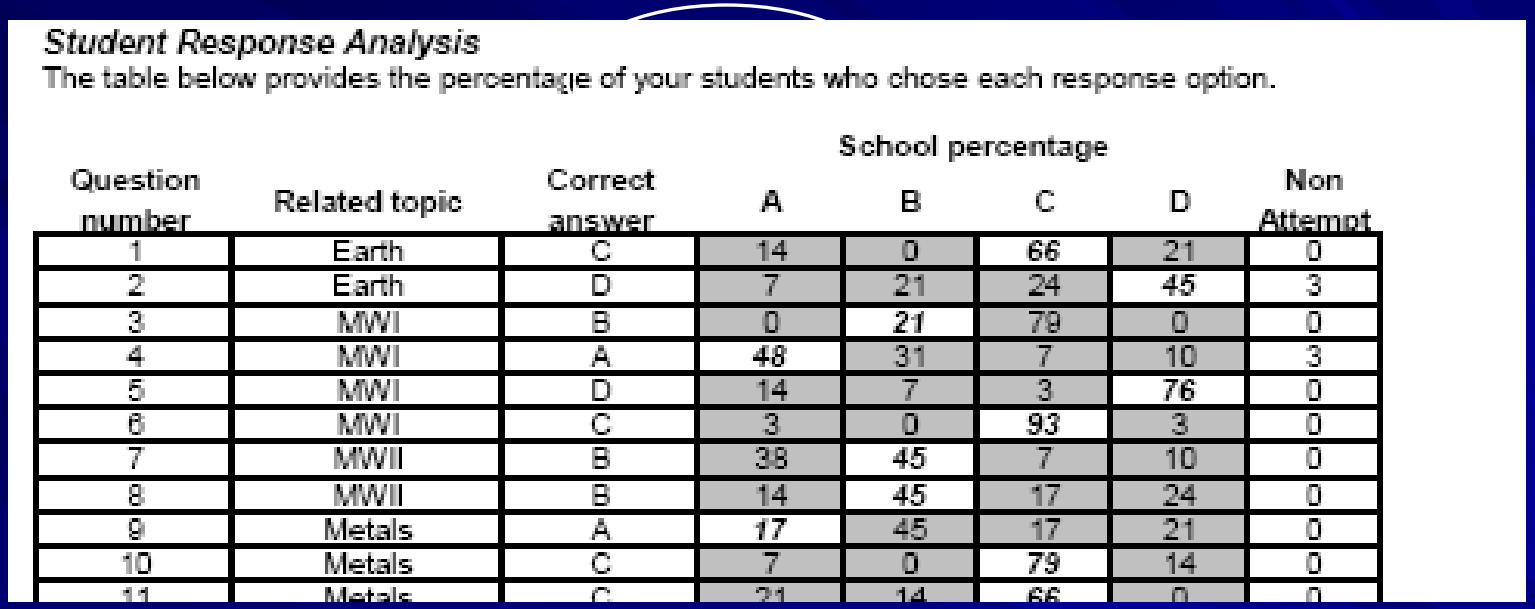
The table below lists all questions in order of difficulty.

Difficult

Question number	Related topic	Correct answer	School percentage correct	HK percentage correct
1	Earth	C	66	83
2	Earth	D	45	49
3	MWI	B	21	32
4	MWI	A	48	45
5	MWI	D	76	58
6	MWI	C	93	81
7	MWII	B	45	45
8	MWII	B	45	38
9	Metals	A	17	34
10	Metals	C	79	87
11	Metals	C	66	60
12	Metals	C	66	55

Detail School performance Analysis with HK performance

Mock Exam Report



Student Response Analysis

The table below provides the percentage of your students who chose each response option.

Question number	Related topic	Correct answer	School percentage A	B	C	D	Non Attempt
1	Earth	C	14	0	*66*	21	0
2	Earth	D	7	21	24	*45*	3
3	MWI	B	0	*21*	79	0	0
4	MWI	A	*48*	31	7	10	3
5	MWI	D	14	7	3	*76*	0
6	MWI	C	3	0	*93*	3	0
7	MWII	B	38	*45*	7	10	0
8	MWII	B	14	*45*	17	24	0
9	Metals	A	*17*	45	17	21	0
10	Metals	C	7	0	*79*	14	0
11	Metals	C	21	14	*66*	0	0

Student Response Analysis

Mock Exam Report

	Score	Award	School percentile	HK percentile
AN	38	B	100	100
WAN	38	B	100	100
TUNG	22	Participation	48	53
YUK	25	E	66	71
	32	C	83	93
AN	18	Participation	17	30
	23	E	52	60

Student Results in school and HK

NSSCA Report

Difficult

Question number	Related topic	Correct answer	Your Answer	HK percentage correct
41	MWI	C	D	15
16	Acids	D	A	23
40	MWII	D	A	23
43	Metals	C	A	23
39	Acids + Redox	B	C	25
26	MWI	B	D	27
38	Redox	D	A	28
32	Acids	D	D	29
3	MWI	B	C	31
17	Acids	A	A	32
9	Metals	A	B	33
20	Redox	B	A	36

Student's Report

2017/18/19 Chem Mock Result

	A	B	C	D	E	F	G
1	PART 1A	Lowest	Lower	Medium	Upper	Highest	Average
2	2017	5	18	22	26	35	22.09
3	2018	0	20	25	29	36	24.07
4	2019	6	18	23	27	34	22.25
5							
6	PART 1B	Lowest	Lower	Medium	Upper	Highest	Average
7	2017	0	29	41	54	77	40.74
8	2018	0	30	42	52	78	40.65
9	2019	1	28	42	53	77	40.98
10							
11	PAPER 2	Lowest	Lower	Medium	Upper	Highest	Average
12	2017	0	12	20	27	38	18.80
13	2018	1	14	21	26	38	20.25
14	2019	0	12	16	21	39	16.70
15							
16		Mean		Median		Mode	Total Marks
17	2017	84		85		96	160
18	2018	86		89		81	160
19	2019	81		83		80	158

More than 1100 Students in 2019

Coming Chemistry Activities (Cont.)

-Australian National Chemistry Quiz (ANCQ) (~4300 Ss in 2019)

- **TBD…**

International Baccalaureate® (IB) Course Materials – NEW!!!

2018 (May & Nov)

Exam Paper – Phy / Chem / Bio / Maths

- **Standard Level / Higher Level**
- **PI MC (40 Qn) + Ans ($80)**
- **PII (Long Qn) (6 Qn) + Ans ($80)**
- **PIII (Elective) (2X Qn) + Ans ($80)**

  (Material, biochem, energy, medicinal chem)
- **Come in pdf file. (Full set 6 files)**

International Baccalaureate® (IB) Course Materials

2015 Exam Question Paper I

2. Which sample contains the largest a

A. 0.20 mol P_2O_5

B. 0.30 mol O_3

C. 0.40 mol CH_3COOH

D. 0.80 mol H_2O

13. The following compounds have similar molar masses:

CH_3CH_2COOH, $CH_3CH_2CH_2CH_2OH$

What is the order of **increasing** boiling points?

A. $CH_3CH_2CH_2CH_2OH < CH_3CH_2COOH < CH_3CH_2C$

B. $CH_3CH_2COOH < CH_3CH_2CH_2CH_2CH_3 < CH_3CH_2C$

C. $CH_3CH_2COOH < CH_3CH_2CH_2CH_2OH < CH_3CH_2C$

D. $CH_3CH_2CH_2CH_2CH_3 < CH_3CH_2CH_2CH_2OH < CH_3C$

International Baccalaureate® (IB) Course Materials

2015 Exam Question Paper II

(b) Calculate the average volume of NaOH added, in cm^3, in
calculate the amount, in mol, of NaOH added.

. . . . . .

(d) (i) Describe two characteristics of a reaction at equilibrium.

. . . . . .

. . . . . .

. . . . . .

. . . . . .

(ii) Describe how a catalyst increases the rate of a reaction.

. . . . . .

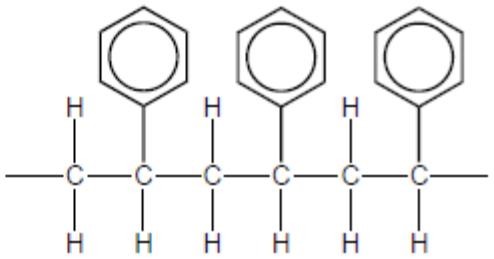
International Baccalaureate® (IB) Course Materials

2015 Exam Question Paper III

Option	Questions
Option A — Modern analytical chemistry	1 – 3
Option B — Human biochemistry	4 – 6
Option C — Chemistry in industry and technology	7 – 10
Option D — Medicines and drugs	11 – 13
Option E — Environmental chemistry	14 – 16
Option F — Food chemistry	17 – 19
Option G — Further organic chemistry	20 – 22

10. The development and application of plastics was one of the most imp
developments of the last century.

The diagram below represents a section of a polymer.



(a) (i) Identify the **two** functional groups in the monomer from w
manufactured.

Other Science Kits – On Sales!!

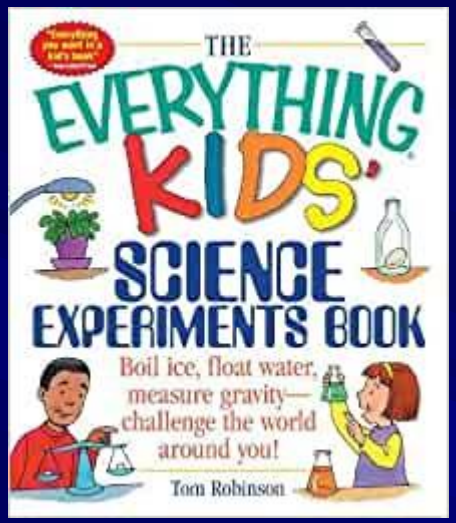
- Molecular models ($180-$400)
- Carbon allotropes models ($50-70)
- Faerie flames – Sales (@$60)
- Balloon Cars – Sales ($10 for 2)

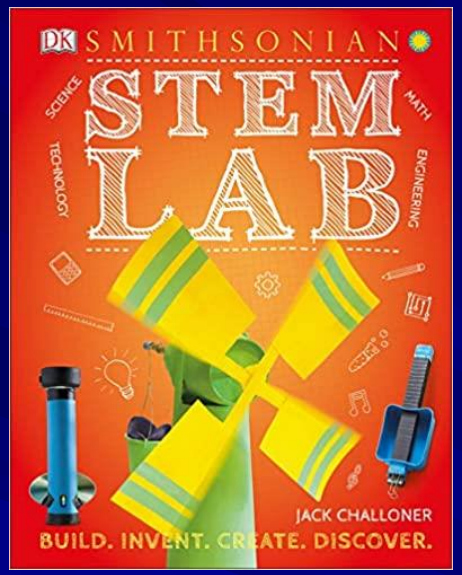
XCM-010-2-
Crystal
Structure
Model Space
Lattice
$280

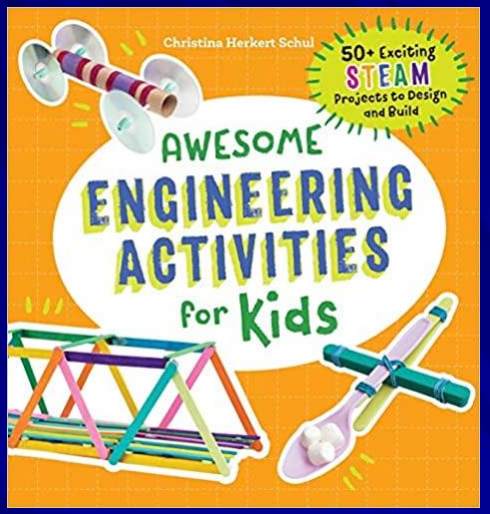
XMM-040
Mini Polymer
$180

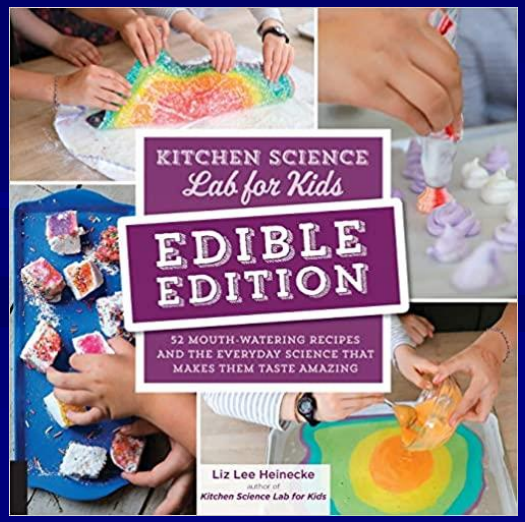
XMM-005-Introductory
Molecular Model Sets
(For Student)5
$320

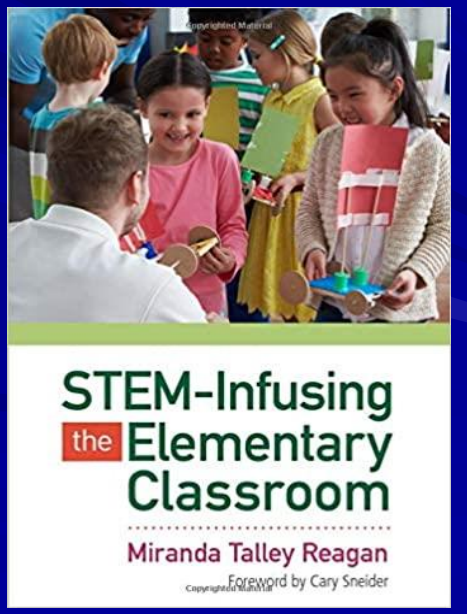
STEM RESOURCE !











WhatsApp Group

- Mobile = 94460432

- - For sending WhatsApp only
- - For getting the latest HKASME news and promote science activities

香港城市大學 數理挑戰者計劃

https://www.cityu.edu.hk/csci/sciencechallenges