SAFETY BAY
SENIOR HIGH SCHOOL

imagine believe achieve

YEAR: 10

SUBJECT: Science

Chemistry

Term 1 2020

GENERAL Pathway

Answer Booklet

Please do not mark this paper.

Yates 2020

5. **Haematite, Fe_2O_3, is not found in the periodic table because**

a) it has properties different from the metals in any other group.
b) it is not an element.
c) it is only a recent discovery.
d) its relative atomic mass is too great.

6. **Elements in the same group of the periodic table have**

a) different chemical and physical properties
b) similar chemical and physical properties
c) similar physical properties
d) different chemical properties

7. **Which is the most reactive non-metal element?**

a) Sodium.
b) Potassium.
c) Chlorine.
d) Fluorine.

8. **When atoms lose electrons, they form:**

a) negative ions.
b) positive ions.
c) neutral ions.
d) Positive and negative ions, depending on their position in the periodic table.

9. **The dense, positively charged mass located in the centre of the atom.**

a) isotope
b) nucleus
c) proton
d) molecule

10. **Which of the following is not a property of metals?**

a) Good conductors of electricity.
b) Good conductors of heat.
c) Low melting and boiling points.
d) High melting and boiling points.

Multiple Choice	Short Answer	Extended Answer	Total
/10	/29	/5	/44

SECTION ONE: Multiple choice answers

Cross (X) through the correct answer.

1	a	b	~~c~~	d
2	a	b	c	~~d~~
3	a	~~b~~	c	d
4	~~a~~	b	c	d
5	a	~~b~~	c	d
6	a	~~b~~	c	d
7	a	b	c	~~d~~
8	a	~~b~~	c	d
9	a	~~b~~	c	d
10	a	b	~~c~~	d

14. In the Periodic Table where do we find the following: (Use directions rows, columns, middle, left, right, top or bottom. You can only use each word once.) (3.5 marks)

a) Periods rows (0.5)

b) Groups columns (0.5)

c) Metals left (0.5)

d) Non-metals right (0.5)

e) Reactive metals bottom (0.5)

f) Reactive non-metals top (0.5)

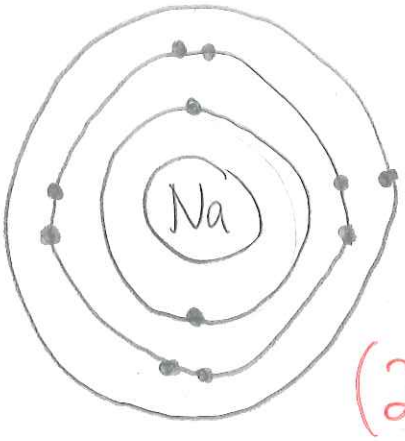
g) Transitional Metals middle (0.5)

15. Match the group number to its group name. (2.5 marks)

Group I	Noble Gases
Group 2	Alkali Metals
Group 4	Alkaline Earth Metals
Group 7/17	Carbon Group
Group 8/18	Halogens

(0.5) marks per correct match.

16. Complete the following table for sodium. (4 marks)

Element	Symbol	Atomic number	Number of electrons	Electron shell diagram	Electron configuration
Sodium	Na	11 (0.5)	11 (0.5)	 (2)	2, 8, 1 (1)

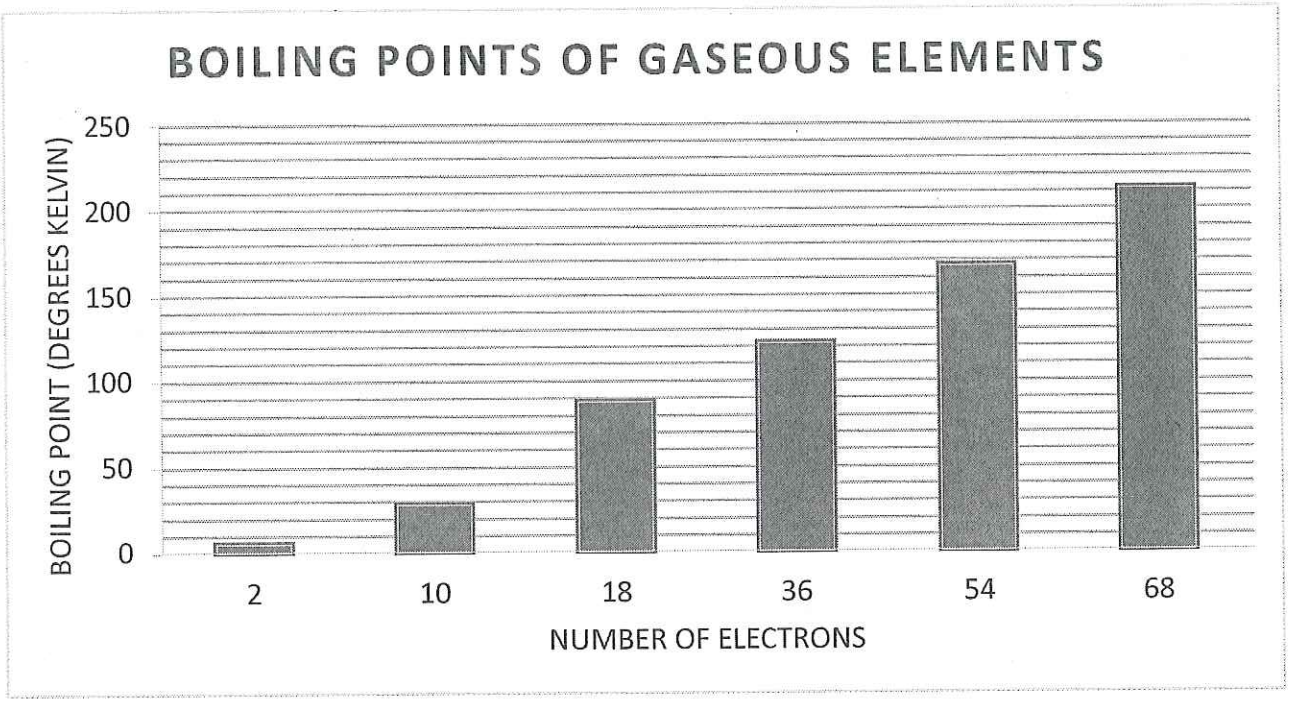
18. There are groups on the periodic table with special characteristics. These are groups 1, 17, 18 on the periodic table. Complete the table below. (5.5 marks)

Group	Group name	Properties	Reactivity trends
1	Alkali metals (0.5)	Shiny, soft, silver white High melting points None occur as elements naturally React with water to form metal hydroxide React with oxygen to form metal oxides	max 1 (0.5) per point Very reactive Reactivity increases as you go down the group.
17	Halogens (0.5)	Max 1 mark (0.5 each point) Can occur in all three states of matter Most form diatomic molecules All 7 valence electrons React with oxygen to form halogen oxides React with metals to form metal halides	Very reactive Reactivity decreases as you go down the group
18	Noble gases (0.5)	Max 1 mark (0.5 each point) Unreactive Very low boiling points so therefore gases Monoatomic gases Produce colours in "neon signs"	Max 1 mark (0.5) each point. Unreactive Valence electron shells are full

Part C: Extended answer

(5 marks)

Use the graph below the answer the following questions.



20. Which group of elements being displayed in the graph (Hint: Think of the annual world science achievement prize). (1 Mark)

Noble gases (1 mark)

21. Explain the trend in the data. (1 marks)

Boiling point increases when number of electrons increases (0.5) marks
Directly proportional (0.5) marks

22. Explain why the above elements do not react with any other element. Use a diagram in your answer. **(P.T.O)** (3 marks)

(0.5) electron arrangement, (0.5) element symbol

They are most stable due to having the maximum number of valence electrons their outer shell can hold (1)

Therefore, they rarely react with other elements since they are already stable (1).