

The City School

Unified Mid-Year Examinations

2018 - 2019

Class 9



SCHOOL NAME

INDEX NUMBER

--	--	--	--

DATE

CHEMISTRY

Paper 1 Multiple Choice

5070/12

1 hour

Additional Materials: Multiple Choice Answer Sheet
Soft Pencil
Soft clean eraser

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.

Do not use paper clips, glue or correction fluid.

Write your School name, Index number and Date in the spaces provided.

There are **thirty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A, B, C** and **D**.

Choose the **one** you consider correct and record your choice in **pencil** on the separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.

Any rough working should be done in this booklet.

A copy of Periodic Table is printed on page 12

Electronic calculators may be used.

Invigilated By: _____

Checked By: _____

Marks Talled By: _____

This document consists of **10** printed pages and **2** blank pages.

1 In which changes do the particles move further apart?



- A W and X B W and Z C X and Y D Y and Z

2 Which electronic configurations represent three metallic elements in the same period of the Periodic Table?

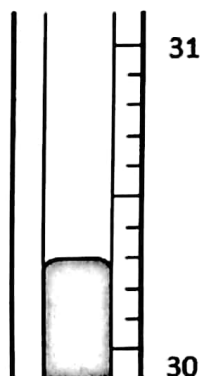
	element 1	element 2	element 3
A	2, 8, 7	2, 8, 8	2, 8, 1
B	2, 1	2, 8, 1	2, 8, 8, 1
C	2, 2	2, 3	2, 4
D	2, 8, 1	2, 8, 2	2, 8, 3

3 One of the instructions for an experiment reads as follows.

Approximately add 50 cm³ of acid. What is the best piece of apparatus to use?

- A a burette
B a conical flask
C a measuring cylinder
D a pipette

4 The diagram shows part of a thermometer.



What is the reading on the thermometer?

- A 30.2 B 30.3 C 31.7 D 31.8

- 5 A student needs to measure four different volumes of a solution accurately. The volumes are 10 cm^3 , 25 cm^3 , 50 cm^3 and 60 cm^3 . The apparatus available includes a 25 cm^3 pipette. Which volumes could be measured using this pipette?
- A 10 cm^3 and 25 cm^3
 B 25 cm^3 and 50 cm^3
 C 25 cm^3 only
 D 50 cm^3 and 60 cm^3
- 6 Which part of an atom has a relative mass of 1 and a relative charge of 0?
- A electron
 B neutron
 C nucleus
 D proton
- 7 An aluminium atom has a nucleon number of 27 and a proton number of 13. How many neutrons does this aluminium atom contain?
- A 13 B 14 C 27 D 40
- 8 Which statement explains why isotopes of the same element have the same chemical properties?
- A They have a different number of neutrons in the nucleus.
 B They have the same number of neutrons in the nucleus.
 C They have the same number of outer shell electrons.
 D They have the same number of protons as neutrons.
- 9 Which of the following could be a transition element?

	melting point in $^{\circ}\text{C}$	density in g / cm^3	colour	electrical conductor
A	114	4.9	purple	no
B	659	2.7	grey	yes
C	1677	4.5	grey	yes
D	3727	2.3	black	yes

- 14 Which row shows the correct number of protons and electrons in the ion of an element in Group II of the Periodic Table?

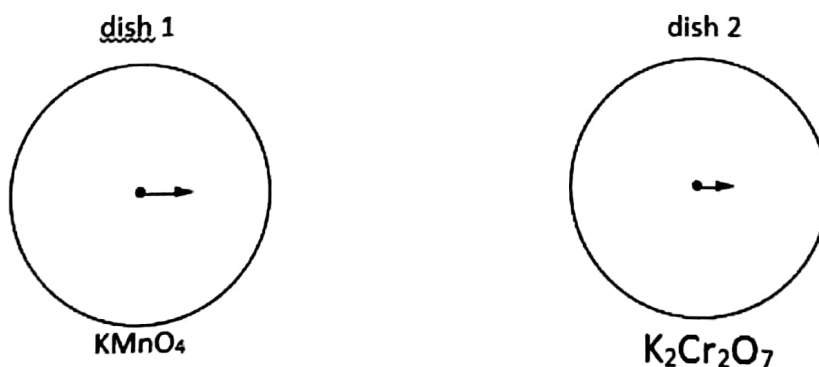
	number of protons	number of electrons
A	9	10
B	12	10
C	14	14
D	16	18

- 15 Which element is sodium?

	melting point in °C	electrical conduction	density in g/cm ³
A	1535	good	7.86
B	1083	good	8.92
C	113	poor	2.07
D	98	good	0.97

- 16 Small crystals of purple KMnO_4 ($M_r = 158$) and orange $\text{K}_2\text{Cr}_2\text{O}_7$ ($M_r = 294$) were placed at the centres of separate petri dishes filled with agar jelly. They were left to stand under the same physical conditions.

After some time, the colour of each substance had spread out as shown.



The lengths of the arrows indicate the relative distances travelled by particles of each substance.

Which statement is correct?

- A** Diffusion is faster in dish 1 because the mass of the particles is greater.
- B** Diffusion is faster in dish 2 because the mass of the particles is greater.
- C** Diffusion is slower in dish 1 because the mass of the particles is smaller.
- D** Diffusion is slower in dish 2 because the mass of the particles is greater.

17 Caesium, Cs, is an element in Group I of the Periodic Table. Which statements about Caesium are true?

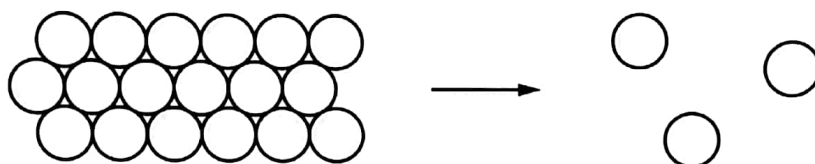
- 1 Caesium conducts electricity both when solid and when molten.
- 2 Caesium reacts explosively with water.
- 3 Caesium reacts with water and forms a solution of $\text{pH} < 7$.

A 1 and 2 only B 1 and 3 only C 2 and 3 only D 1, 2 and 3

18 Which particle is found in iodine vapour?

A I B I⁻ C I⁺ D I₂

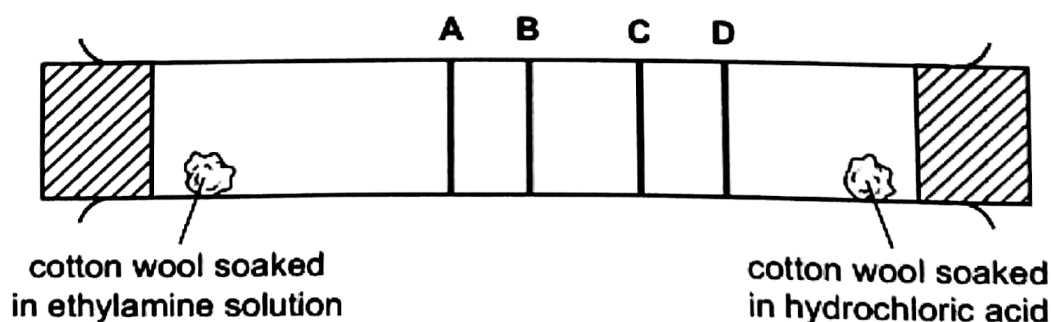
19 The diagram shows how the arrangement of particles changes when a substance changes state.



Which change of state is shown?

- A boiling
- B condensation
- C evaporation
- D sublimation

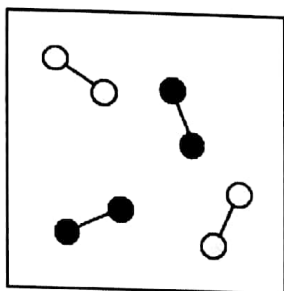
20 Ethylamine gas, $\text{C}_2\text{H}_5\text{NH}_2$, and hydrogen chloride gas, HCl , react together to form a white solid, ethylamine hydrochloride. At which position in the tube would a ring of solid white ethylamine hydrochloride form?



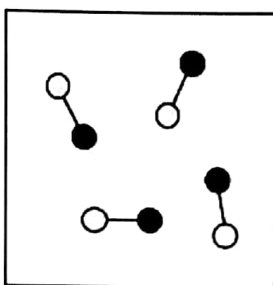
- 21 A student put 25.0 cm^3 of dilute hydrochloric acid into a conical flask. The student added 2.5 g of solid sodium carbonate and measured the change in temperature of the mixture.

Which apparatus does the student need to use to obtain the most accurate results?

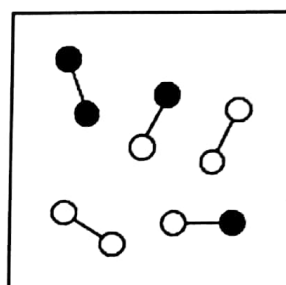
- A balance, measuring cylinder, thermometer
 B balance, pipette, stopwatch
 C balance, pipette, thermometer
 D burette, pipette, thermometer
- 22 Which statement about the boxes P, Q and R is correct?



P



Q



R

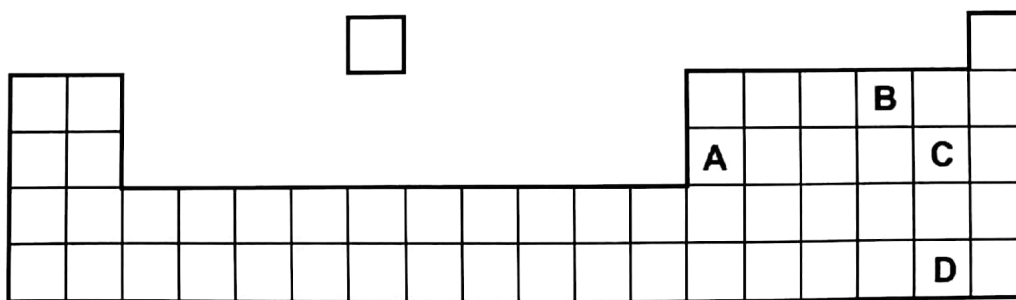
- A Box P contains two compounds and box R contains two elements.
 B Box P contains two elements and box Q contains a mixture.
 C Box P contains two elements and box Q contains one compound.
 D Box Q contains two compounds and box R contains a mixture.
- 23 The number of particles in atoms W, X, Y and Z are shown.

	protons	electrons	neutrons
W	6	6	6
X	6	6	7
Y	7	7	7
Z	7	7	8

Which statement is correct?

- A W and X are isotopes of carbon.
 B X and Y are isotopes of nitrogen.
 C X has a mass number of 12.
 D Z has an atomic number of 8.

- 24 The positions of four elements are shown on the outline of part of the Periodic Table. Which element is a solid non-metal at r.t.p.?



- 25 Astatine is an element in Group VII of the Periodic Table.

Astatine is1..... reactive than iodine.

The melting point of astatine is2..... than the melting point of iodine.

Astatine is3..... in colour than bromine.

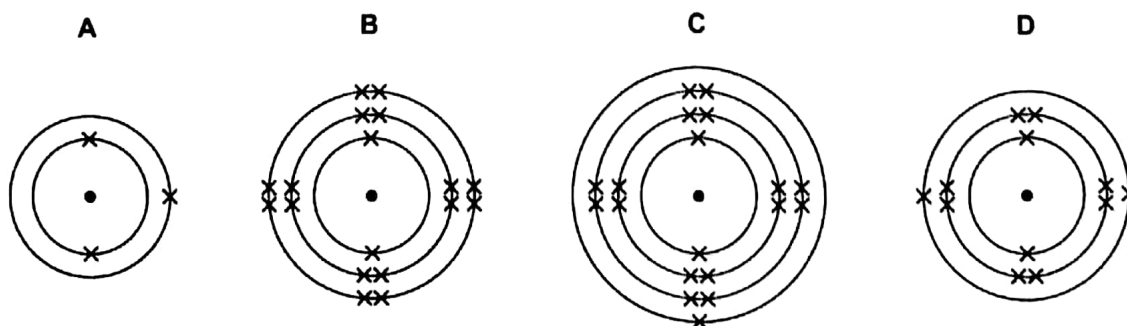
Which words complete gaps 1, 2 and 3?

	1	2	3
A	less	higher	darker
B	less	lower	lighter
C	more	higher	darker
D	more	lower	lighter

- 26 Why is argon gas used to fill electric lamps?

- A It conducts electricity.
- B It glows when heated.
- C It is less dense than air.
- D It is not reactive.

- 27 The diagram shows the arrangement of electrons in the atoms of four different elements. Which is the least reactive of the four elements?



28 The symbols for two ions are shown.



Which statement is correct?

- A The chloride ion contains more electrons than the potassium ion.
 - B The potassium ion contains more neutrons than the chloride ion.
 - C The two ions contain the same number of electrons as each other.
 - D The two ions contain the same number of protons as each other.
- 29 Which statement about the elements in the Periodic Table is correct?
- A All the elements in the same group of the Periodic Table have the same reactivity.
 - B All the elements with four electrons in their outer shells are metals.
 - C An element in Group II of the Periodic Table would form an ion with a 2- charge.
 - D Elements in the same period of the Periodic Table have the same number of shells of electrons.
- 30 Which substance in the table is the element iodine?

	state at room temperature	electrical conductivity when molten
A	liquid	good
B	liquid	none
C	solid	good
D	solid	none

The Periodic Table of Elements

		Group															
I	II	III	IV	V	VI	VII	VIII										
3 Li lithium 7	4 Be beryllium 9	1 H hydrogen 1	5 B boron 11	6 C carbon 12	7 N nitrogen 14	8 O oxygen 16	9 F fluorine 19	10 Ne neon 20									
11 Na sodium 23	12 Mg magnesium 24	13 Al aluminum 27	14 Si silicon 28	15 P phosphorus 31	16 S sulfur 32	17 Cl chlorine 35.5	18 Ar argon 40										
19 K potassium 39	20 Ca calcium 40	21 Sc scandium 45	22 Ti titanium 48	23 V vanadium 51	24 Cr chromium 52	25 Mn manganese 55	26 Fe iron 56	27 Co cobalt 59	28 Ni nickel 59	29 Cu copper 64	30 Zn zinc 65	31 Ga gallium 70	32 Ge germanium 73	33 As arsenic 75	34 Se selenium 79	35 Br bromine 80	36 Kr krypton 84
37 Rb rubidium 85	38 Sr strontium 88	39 Y yttrium 89	40 Zr zirconium 91	41 Nb niobium 93	42 Mo molybdenum 96	43 Tc technetium -	44 Ru ruthenium 101	45 Rh rhodium 103	46 Pd palladium 106	47 Ag silver 108	48 Cd cadmium 112	49 In indium 115	50 Sn tin 119	51 Sb antimony 122	52 Te tellurium 128	53 I iodine 127	54 Xe xenon 131
55 Cs caesium 133	56 Ba barium 137	57-71 lanthanoids	72 Hf hafnium 178	73 Ta tantalum 181	74 W tungsten 184	75 Re rhenium 186	76 Os osmium 190	77 Ir iridium 192	78 Pt platinum 195	79 Au gold 197	80 Hg mercury 201	81 Tl thallium 204	82 Pb lead 207	83 Bi bismuth 209	84 Po polonium -	85 At astatine -	86 Rn radon -
87 Fr francium -	88 Ra radium -	89-103 actinoids	104 Rf rutherfordium -	105 Db dubnium -	106 Sg seaborgium -	107 Bh bohrium -	108 Hs hassium -	109 Mt meitnerium -	110 Ds darmstadtium -	111 Rg roentgenium -	112 Cn copernicium -	114 Fl flerovium -	116 Lv livermorium -	-	-	-	-

Key
atomic number
atomic symbol
name
relative atomic mass

57 La lanthanum 139	58 Ce cerium 140	59 Pr praseodymium 141	60 Nd neodymium 144	61 Pm promethium -	62 Sm samarium 150	63 Eu europium 152	64 Gd gadolinium 157	65 Tb terbium 159	66 Dy dysprosium 163	67 Ho holmium 165	68 Er erbium 167	69 Tm thulium 169	70 Yb ytterbium 173	71 Lu lutetium 175
89 Ac actinium -	90 Th thorium 232	91 Pa protactinium 231	92 U uranium 238	93 Np neptunium -	94 Pu plutonium -	95 Am americium -	96 Cm curium -	97 Bk berkelium -	98 Cf californium -	99 Es einsteinium -	100 Fm fermium -	101 Md mendelevium -	102 No nobelium -	103 Lr lawrencium -

lanthanoids

actinoids

The volume of one mole of any gas is 24 dm³ at room temperature and pressure (r.t.p.)