

Test: Practice Questions - Online RA Session #02 - Chemistry

Points: 30 points

Name: _____

Score: _____

Date: _____

Signature: _____

Select multiple choice answers with a cross or tick:

☐ Only select one answer

☐ Can select multiple answers

These questions should be answered in exam conditions.

Materials

For these practice questions you must have:

- a pen or pencil
- plain paper
- a scientific calculator
- the periodic table.

Instructions

- To provide your answer select, write, or choose the correct option. Each question will have a different answering method and you must provide your answer accordingly.
- Complete all rough work on the plain paper listed above.

Information

- The maximum mark for these questions is 30.
- The marks for questions are shown below the question number.
- You are expected to use a calculator where appropriate.
- You must answer all questions.

Question 1 of 14

Raising Attainment

1 pt

In the Periodic Table, how are elements arranged?

- ☐ A) In order of reactivity.
- ☐ B) In order of mass.
- ☐ C) In order of atomic number.
- ☐ D) In order of atomic radius.

Question 2 of 14

Raising Attainment

1 pt

Elements in the same group have the same number of what?

- ☐ A) Protons
- ☐ B) Neutrons
- ☐ C) Occupied electron shells
- ☐ D) Outer electrons

Question 3 of 14

Raising Attainment

1 pt

Elements in the same period have the same number of what?

- ☐ A) Outer electrons
- ☐ B) Neutrons
- ☐ C) Occupied electron shells
- ☐ D) Reactions

Question 4 of 14

Raising Attainment

1 pt

Ions with a 2+ charge are formed by elements in which group?

- ☐ A) Group 6
- ☐ B) Group 1
- ☐ C) Group 2
- ☐ D) Group 7

Question 5 of 14

Raising Attainment

1 pt

Which chemical element has the symbol Pd?

- ☐ A) Platinum
- ☐ B) Palladium
- ☐ C) Lithium
- ☐ D) Zirconium
- ☐ E) Bismuth
- ☐ F) Nobelium
- ☐ G) Lead
- ☐ H) Argon

Question 6 of 14

Raising Attainment

1 pt

An element with electronic configuration 2,6 would be where on the Periodic Table?

- ☐ A) Period 8 and Group 2
- ☐ B) Period 2 and Group 6
- ☐ C) Period 6 and Group 2
- ☐ D) Period 3 and Group 1
- ☐ E) Period 1 and Group 8

Question 7 of 14

Raising Attainment

1 pt

What is the electronic structure of Carbon?

- ☐ A) 4,2
- ☐ B) 6
- ☐ C) 2,8,8
- ☐ D) 2,2
- ☐ E) 2,2,2
- ☐ F) 2,4
- ☐ G) 8,2,8
- ☐ H) 2,8,1

Question 8 of 14

Raising Attainment

1 pt

Which periodic group is Magnesium a member of?

- ☐ A) Group 1
- ☐ B) Group 2
- ☐ C) Group 3
- ☐ D) Group 4

Question 9 of 14

Raising Attainment

2 pts

Select all of the following elements that are a member of the halogens.

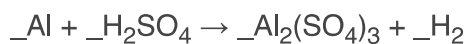
- ☐ A) Carbon
- ☐ B) Potassium
- ☐ C) Xenon
- ☐ D) Hydrogen
- ☐ E) Bromine
- ☐ F) Aluminium
- ☐ G) Sulfur
- ☐ H) Iodine

Question 10 of 14

Raising Attainment

3 pts

Balance the following equation:



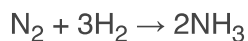
Copy the equation and replace the underscores () to balance.

Question 11 of 14

Raising Attainment

5 pts

Nitrogen and hydrogen react together in the following way:



The bond energies for some particles are shown below:

N≡N: 941 kJ/mol

H-H: 436 kJ/mol

N-H: 391 kJ/mol

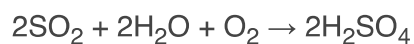
Calculate the overall energy change of the reaction.

Question 12 of 14

Raising Attainment

5 pts

The waste product SO₂ can be used to produce sulfuric acid.
The equation for the reaction is:



The bond energies involved are shown below:

S=O: 522 kJ/mol

O=O: 494 kJ/mol

O-H: 459 kJ/mol

S-O: 265 kJ/mol

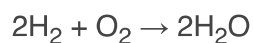
Calculate the overall energy change.

Question 13 of 14

Raising Attainment

5 pts

Using the following bond energies, calculate the energy change for the reaction below.



H-H: 436 kJ/mol

O=O: 498 kJ/mol

O-H: 463 kJ/mol

The previous reaction had an overall energy change of -482 kJ/mol . What type of reaction was it?

- ☐ A) Exothermic
- ☐ B) Endothermic