



## Academic Year 2016- 2017

### Second Term

### Chemistry Revision sheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Grade 9 / \_\_\_\_\_

#### Q1 : Choose the letter of the best answer.

1. The relationship between the mass  $m$  of a material, its volume  $V$ , and its density  $D$  is

- $V = mD$ .
- $Vm = D$ .
- $m = DV$ .
- $D + V = m$ .

2. A measurement is precise if it

- is reproducible.
- is exactly the same as the true value of the quantity measured.
- has many decimal places.
- has many significant figures.

3. Written in scientific notation, the measurement 0.000 075 cm is

- $7.5 \times 10^{-4}$  cm
- $7.5 \times 10^{-5}$  cm
- $7.5 \times 10^{-6}$  cm
- $7.5 \times 10^{-4}$  cm

4. The unit  $m^3$  is used to express

- length.
- mass.
- volume.
- density.

5. How many electrons are present in an atom of potassium that has the electron configuration  $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$ ?
- 6
  - 19
  - 20
  - 36
6. SI base units for length and mass are
- centimeter and gram.
  - meter and gram.
  - centimeter and kilogram.
  - meter and kilogram.
7. A measure of the quantity of matter is
- density.
  - weight.
  - volume.
  - mass.
8. According to the Aufbau principle, which of the following sublevels is lowest in energy?
- $3d$
  - $4s$
  - $4p$
  - $5s$
9. To which group does Magnesium ( $^{12}\text{Mg}$ ) belong?
- Group 1
  - Group 2
  - Group 18
  - None of the above
10. An element that has the electron configuration  $[\text{He}] 2s^2$  is in Period
- 2.
  - 3.
  - 4.
  - 6.

11. The ground-state electron configuration of oxygen is  $1s^2 2s^2 2p^4$ . In this arrangement, how many of oxygen's p orbitals are completely filled?
- 1
  - 2
  - 3
  - 6
12. Which of the following is a noble gas?
- carbon
  - oxygen
  - sodium
  - neon
13. You can estimate the degree to which a bond between two atoms is ionic or covalent by calculating the
- distance between the atoms' nuclei.
  - difference in the atoms' electronegativities.
  - atoms' atomic radii.
  - number of atoms in the compound.
14. The noble-gas notation for the electron configuration of bromine is  $[\text{Ar}] 3d^{10} 4s^2 4p^5$ . How many unpaired electrons are there in an atom of bromine in the ground state?
- 0
  - 1
  - 3
  - 5

15. Use the table below to choose the pair of elements that will most likely have the *least* ionic character.

Element	Electronegativity	Element	Electronegativity
Na	0.9	O	3.5
Cl	3.0	H	2.1

- a. Na and Cl
- b. O and Cl
- c. H and O
- d. Na and O

16. A single covalent bond involves the sharing of

- a. only one electron.
- b. two electrons.
- c. three electrons.
- d. a variable number of electrons, which depends on the bonding atoms.

**Q2:** Without looking at the periodic table, identify the group, period, and block for the following elements that has the electron configuration:

	Group	Period	Block
$[\text{Ar}]3d^54s^1$			
$[\text{Ar}]4s^2$			

**Q3:** What is the percentage error for a mass measurement of 24.2 g, given that the correct value is 12.2g?

**Q4: What is the electron configuration, orbital notation and noble gas notation for the following atom?**

Note that the Noble gases are:  ${}^2\text{He}$ ,  ${}^{10}\text{Ne}$ .

**Chlorine Cl having atomic number 17 ( ${}^{17}\text{Cl}$ ).**

Number of electrons: -----

Electron configuration: -----

Orbital Notation:

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Noble gas notation:

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**Q5: After finding the electron configuration and orbital notation for Phosphorus, answer the following:**

**15 p**

a. How many electron- containing orbitals are present in an atom of Phosphorus?

\_\_\_\_\_

b. How many of these orbitals are filled in this atom of Phosphorus?

\_\_\_\_\_

c. In which sublevel are the unpaired electrons present?

\_\_\_\_\_

\_\_\_\_\_

**Q6: Compare the following two pairs of atoms and identify the type of bonding (ionic, polar covalent or non-polar covalent) would be expected between the following atoms after finding their electronegativity difference?**

**A. Li and F: Noting that the electronegativity for Li is 1.0 and the electronegativity for F is 4.0**

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**B. S and H: Noting that the electronegativity for S is 2.5 and the electronegativity for H is 2.1**

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**C. I and Br: Noting that The electronegativity for I is 2.5 and The electronegativity for Br is 2.8**

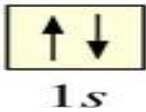
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**Q7: Solve the following question**

A block of marble has a mass of 3.5 g. Find the density of this block of marble in  $\text{g/cm}^3$  given that the volume of this block is  $3 \text{ m}^3$ .

**Q8: Match each term in column (A) with its definition in column (B)**

A		B
1	Accuracy	Is something that has magnitude, size or amount.
2	Aufbau Principle	Is the description of how close a measurement is to the true value of the quantity measured.
3	quantity	According to the principle, an electron occupies the lowest energy orbital that can receive it.
4	Pauli Exclusion Principle	Is the attraction between the nuclei and the valence electrons.
5	Chemical Bond	 <p style="text-align: center;">1s</p>
6	Non-polar covalent bonding	Is the bond in which the bonding electrons are shared equally by the bonded atoms resulting in a balanced distribution of the electrical charge.

**Q9: What is the main distinction between ionic and covalent bond?**

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