**Science 9**

**PRACTICE EXAM**

**Name - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Part 1 – Multiple Choice (Value - 40)**

**Circle the letter of the best answer.**

1

3. Which list includes only nonmetals?

(a) krypton, nitrogen, helium, xenon

(b) titanium, zinc, copper, lead

(c) gold, mercury, carbon, iron

(d) nickel, platinum, chlorine, aluminum

5. A family in the periodic table that contains only nonmetals is the

(a) actinides

(b) alkali metals

(c) lanthanides

(d) halogens

6. Which substance in the following list is an element?

(a) ammonia

(b) methane

(c) bismuth

(d) water

9. An atom has a total of 18 electrons. These electrons are found in 3 orbits that have:

(a) 6 electrons each

(b) 8, 8, and 2 electrons, moving out from the nucleus;

(c) 2, 8, and 8 electrons, moving out from the nucleus;

(d) 2, 10, and 6 electrons, moving out from the nucleus.

13. An atom becomes an ion with a charge of +2 when it:

(a) gains 2 protons

(b) loses 2 neutrons

(c) loses 2 electrons

(d) gains 2 electrons

16. Boron-11 has \_\_\_ neutrons.

(a) 11

(b) 6

(c) 5

(d) 3

17. Which statement concerning electric charges is true?

(a) There is one type of electric charge.

(b) There are two types of electric charge.

(c) There are three types of electric charge.

(d) There are four types of electric charge.

18. Which element is a member of the halogens?

(a) astate

(b) copper

(c) radium

(d) potassium

19. Protons are

(a) negatively charged particles found outside the nucleus of an atom.

(b) neutral particles found in the nucleus of an atom.

(c) positively charged particles found outside the nucleus of an atom.

(d) positively charged particles found in the nucleus of an atom.

21. A beryllium ion has

(a) 4 protons, 6 electrons and an ionic charge of 2-.

(b) 4 protons, 2 electrons and an ionic charge of 2+.

(c) 4 protons, 6 electrons and an ionic charge of 2+.

(d) 4 protons, 2 electrons and an ionic charge of 2-.

22. In the Periodic Table, elements with similar properties are grouped in:

(a) diagonal rows

(b) horizontal rows

(c) periods

(d) vertical columns

23. Gold can be hammered into thin sheets. What physical property is being described?

(a) malleability

(b) ductility

(c) viscosity

(d) solubility

24. Which of the following is a chemical property?

(a) freezing

(b) burning

(c) dissolving

(d) boiling

25. Which of the following includes only mixtures?

(a) heterogeneous mixtures and solutions

(b) elements, compounds and solutions

(c) compounds and solutions

(d) elements and compounds

26. The symbol that represents a switch in a circuit diagram is

+

(a) (b) (c) d)

33. Which WHMIS symbol means “bio-hazardous infectious material”?



(a) (b) (c) (d)

**Part 3 – Atoms (Value - 15)**

**Write your answers in the space provided.**

1. Give the standard atomic notation for sodium-23 **and** draw its Bohr-Rutherford

diagram. **(5)**

2. Magnesium and fluorine react to form a compound.

(a) Draw **Bohr** diagrams of magnesium and fluorine separately. **(2)**

(b) Circle the metal and underline the nonmetal. **(1)**

magnesium fluorine

(d) What are the charges on the magnesium and fluoride ions? **(2)**

(e) Give the chemical formula and the chemical name of the compound formed when

magnesium and fluorine react. **(2)**

**Part 8 – Electricity (Value - 13)**

**Use complete sentences for written responses.**

1. What is the study of static electricity called? **(1)**

2. What are the two types of electrical charge? **(2)**

3. What are the four basic components of an electric circuit? **(4)**

4. a) Using the symbols below, draw a circuit diagram illustrating two bulbs in series so

that both bulbs are lit. **(4)**

+

5. On the circuit diagram you drew in part (a), add a wire to create a short circuit. **(1)**

6. Imagine you have two bulbs in parallel in a closed circuit. What happens if you

unscrew one of the bulbs? **(1)**