

## Assignment: G10 Science - Class 08 Midterm Test

## Midterm Test: Chemistry &amp; Biology

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## A. MULTIPLE CHOICE: Circle the correct choice. [20 marks]

1. Which line gives the correct number of protons, neutrons and electrons in an atom of zinc  ${}_{30}^{65}\text{Zn}$ ?

- a) 30p, 35n, 30e
- b) 30p, 30n, 35e
- c) 35p, 35n, 30e
- d) 65p, 65n, 30e

1 Pt

☒ A ☐ B ☐ C ☐ D ☐ E

2. Which of the following is the correct Lewis Dot Structure for Sulfur?



1 Pt

☐ A ☐ B ☐ C ☒ D ☐ E

3. Which of the following is NOT a property of ionic compounds?

- a) Hard, brittle
- b) Low melting points
- c) Conducts electricity in the molten state
- d) Forms crystal-like structures

1 Pt

☐ A ☒ B ☐ C ☐ D ☐ E

4. What must be in sufficient amounts for complete combustion to occur?

- a) Energy
- b) Carbon Dioxide
- c) Water
- d) Oxygen

1 Pt

☐ A ☐ B ☐ C ☒ D ☐ E

5. In reactions with non-metals, metals tend to:

- a) Lose electrons to become positively charged anions
- b) Gain electrons to become positively charged cations
- c) Gain electrons to become negatively charged anions
- d) Lose electrons to become positively charged cations

1 Pt

☐ A ☐ B ☐ C ☒ D ☐ E

6. In which of the following pairs do the atoms and ions have the same total number of electrons?

- a) N and P
- b)  $\text{F}^-$  and  $\text{O}^{2-}$
- c) Na and  $\text{K}^+$
- d)  $\text{Fe}^{2+}$  and  $\text{Fe}^{3+}$

1 Pt

☐ A ☒ B ☐ C ☐ D ☐ E

7. Which of the following will form cations?

- a) Alkali metals
- b) Halogens
- c) Noble Gases
- d) All of the above

1 Pt

☒ A ☐ B ☐ C ☐ D ☐ E

8. Which of the following is an ionic compound?

- a)  $\text{CO}_2$
- b)  $\text{CaO}$
- c)  $\text{CH}_4$
- d)  $\text{BCl}_3$

1 Pt

☐ A ☒ B ☐ C ☐ D ☐ E

9. The bond in  $\text{Cl}_2$  could be described as:

- a) Ionic
- b) Covalent
- c) Ionic and Covalent
- d) Neither ionic nor covalent

1 Pt

☐ A ☒ B ☐ C ☐ D ☐ E

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10. The state symbol (aq) indicates that the substance is:

- a) A liquid
- b) A gas
- c) Dissolved in water
- d) A solid

1 Pt

A B C D E

11. The period in which the cell grows and performs regular functions is called:

- a) Interphase
- b) Anaphase
- c) Prophase
- d) Cytokinesis

1 Pt

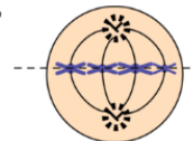
A B C D E

12. Which of the following stages in mitosis is represented in this diagram?

- a) Prophase
- b) Metaphase
- c) Anaphase
- d) Telophase

1 Pt

A B C D E



13. The thin sheet of tissue that covers the body surfaces and inner lining is called the:

- a) Epithelial Tissue
- b) Connective Tissue
- c) Muscle Tissue
- d) Nerve Tissue

1 Pt

A B C D E

14. What is the name of the hair-like projections found in the bronchi that sweep debris out?

- a) Goblet Cells
- b) Bronchioles
- c) Alveoli
- d) Cilia

1 Pt

A B C D E

15. Cell differentiation describes the:

- a) Colour change in fall leaves
- b) Height of pine trees
- c) Specialization of cells for different functions
- d) Leaf shapes found on trees

1 Pt

A B C D E

16. When too much water is absorbed from the large intestine, the result is:

- a) Dehydration
- b) Diarrhea
- c) Kidney stones
- d) Constipation

1 Pt

A B C D E

17. When not enough water is absorbed from the large intestine, the result is:

- a) Dehydration
- b) Diarrhea
- c) Kidney stones
- d) Constipation

1 Pt

A B C D E

18. A woman notices blue zigzag lines around her legs after her pregnancy. What might her symptoms indicate?

- a) Atherosclerosis
- b) Tuberculosis
- c) Multiple sclerosis
- d) Varicose veins

1 Pt

A B C D E

19. Which of the following is NOT a function of the circulatory system?

- a) To deliver nutrients and gases
- b) To defend against invading organisms
- c) To regulate body temperature
- d) To give structure to organisms

1 Pt

A B C D E

20. A patient with a poor immune response may have the following condition:

- a) Low white blood cell count
- b) High white blood cell count
- c) Low red blood cell count
- d) High red blood cell count

1 Pt

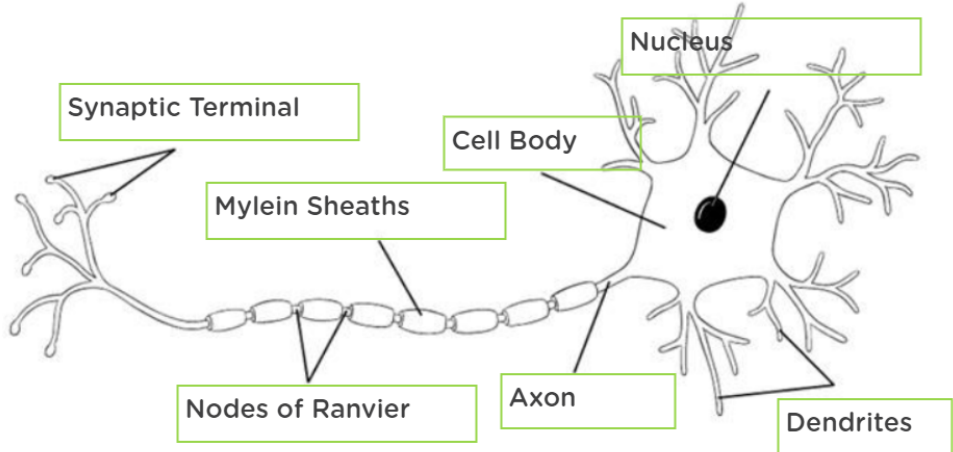
A B C D E

**B. MATCHING: Match the correct letter with the word. [10 marks]**

<b>E</b>	Decomposition	a) $A + B \rightarrow AB$
<b>C</b>	Double Displacement	b) $A + BC \rightarrow AC + B$
<b>B</b>	Single Displacement	c) $AB + CD \rightarrow AD + CB$
<b>A</b>	Synthesis	d) $A + O_2 \rightarrow AO + \text{energy}$
<b>D</b>	Combustion	e) $AB \rightarrow A + B$
<b>H</b>	Peristalsis	f) Stores sugars, proteins and maintains turgor pressure in plants
<b>I</b>	Insulin	g) Sorts and packages proteins leaving the cell
<b>J</b>	Cytoplasm	h) A wave-like contraction in the esophagus
<b>G</b>	Golgi Bodies	i) Enzyme secreted to regulate glucose levels in the body
<b>F</b>	Vacuole	j) A jelly-like liquid that suspends the organelles in a cell

**C. DIAGRAMS: Draw the following in the space provided.**

21. Label the following diagram [7 marks]



**D. SHORT ANSWERS: Write your answers in the space provided.**

22. Identify three ways that plants prevent water loss. [3 marks]

Assignment: G10 Science - Class 08 Midterm Test 23. Complete the following chart. [12 marks]

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Chemical Formula	Chemical Name
FeCl <sub>3</sub>	Iron III Chloride
CCl <sub>4</sub>	Carbon Tetrachloride
CuS	Copper Sulfide
HBr (aq)	Hydrogen Bromide
Na <sub>2</sub> CO <sub>3</sub>	Sodium Carbonate
LiBr	Lithium Bromide
Mg <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	Magnesium phosphate
Ag <sub>2</sub> S	Silver sulfide
P <sub>2</sub> O <sub>5</sub>	Diphosphorus pentoxide
Ca(OH) <sub>2</sub>	Calcium hydroxide
FeS	Iron (II) sulfide
Br	Bromine

24. In an experiment, 47g of magnesium react with 82g of hydrochloric acid to produce a gas and 75g of magnesium chloride.

- a. Do these results comply with the Law of Conservation of Mass? Justify your answer. [2 marks]

These results comply with the Law of Conservation of Mass as long as there is 54 grams of gas produced, because no energy or matter can be created or destroyed.

- b. What is the gas produced? [1 mark]

The gas produced is Hydrogen gas

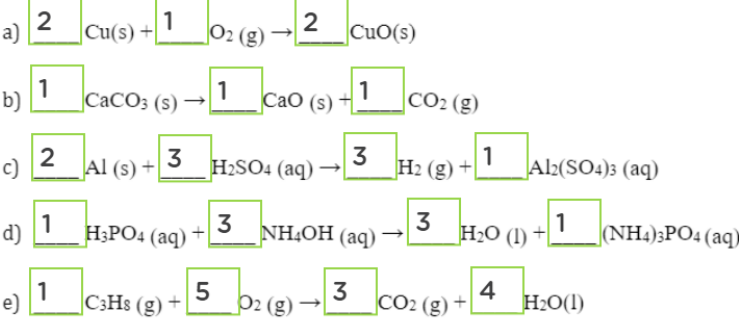
- c. How could you test for this gas? [1 mark]

This gas can be tested by lighting a flame and observing for combustion

- d. Write a balanced chemical equation for this reaction. [2 marks]



25. Balance the following reactions. [5 marks]



26. Identify the type of chemical reaction for all of the reactions in Question 25. [5 marks]

a)	Synthesis
b)	Decomposition
c)	Single Displacement
d)	Double Displacement
e)	Complete Combustion

27. What are the structure and function of each of the following organs? [6 marks]

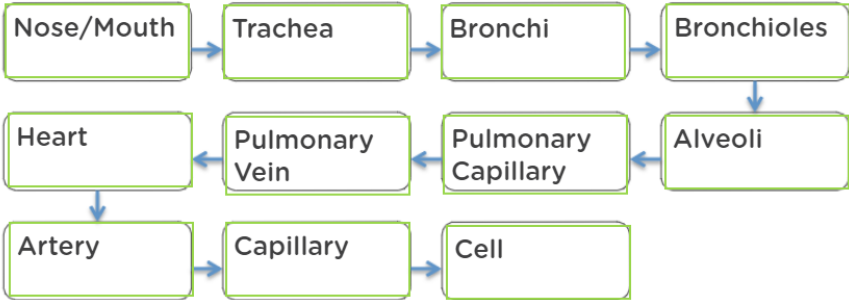
Artery	Structure:	
	Function:	
Vein	Structure:	
	Function:	
Capillary	Structure:	
	Function:	

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38. Imagine you are an oxygen molecule from the atmosphere. Complete the flowchart below using the word bank below to show how the oxygen molecule enters cells from the atmosphere. [9 marks]

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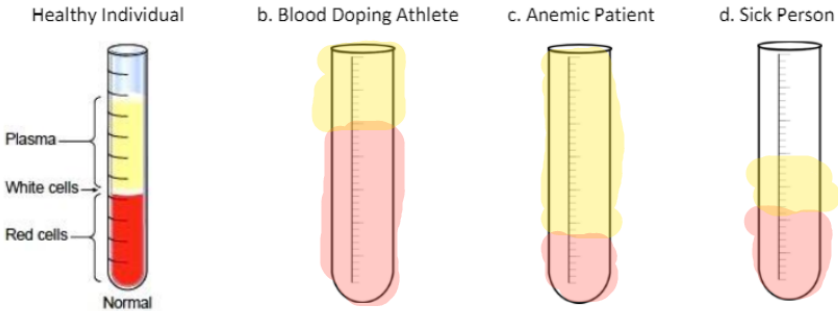
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Word Bank:

~~Nose/Mouth~~ ~~Capillary~~ ~~Cell~~ ~~Alveoli~~ ~~Heart~~ ~~Pulmonary Vein~~  
~~Artery~~ ~~Pulmonary Capillary~~ ~~Bronchi~~ ~~Trachea~~ ~~Bronchioles~~

29. Given the hematocrit of a healthy individual, draw the hematocrit samples for the following people relative to the healthy individual. Label each layer of the hematocrit. [3 marks]



BONUS: Balance the following reaction. [1 mark]

