

Assignment: G10 Science - Class 08 Midterm Test

Midterm Test: Chemistry & Biology

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Class Code: OQJ PAV

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 $^{65}_{30}\text{Zn}$?
- 30p, 35n, 30e
 - 30p, 30n, 35e
 - 35p, 35n, 30e
 - 65p, 65n, 30e

1 Pt

<input checked="" type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
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2. Which of the following is the correct Lewis Dot Structure for Sulfur?



1 Pt

<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input checked="" type="radio"/> D	<input type="radio"/> E
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3. Which of the following is NOT a property of ionic compounds?

- Hard, brittle
- Low melting points
- Conducts electricity in the molten state
- Forms crystal-like structures

1 Pt

<input type="radio"/> A	<input checked="" type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
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4. What must be in sufficient amounts for complete combustion to occur?

- Energy
- Carbon Dioxide
- Water
- Oxygen

1 Pt

<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input checked="" type="radio"/> D	<input type="radio"/> E
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5. In reactions with non-metals, metals tend to:

- Lose electrons to become positively charged anions
- Gain electrons to become positively charged cations
- Gain electrons to become negatively charged anions
- Lose electrons to become positively charged cations

1 Pt

<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input checked="" type="radio"/> D	<input type="radio"/> E
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6. In which of the following pairs do the atoms and ions have the same total number of electrons?

- N and P
- F⁻ and O²⁻
- Na and K⁺
- Fe²⁺ and Fe³⁺

1 Pt

<input type="radio"/> A	<input checked="" type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
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7. Which of the following will form cations?

- Alkali metals
- Halogens
- Noble Gases
- All of the above

1 Pt

<input checked="" type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
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8. Which of the following is an ionic compound?

- CO₂
- CaO
- CH₄
- BCl₃

1 Pt

<input type="radio"/> A	<input checked="" type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
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9. The bond in Cl₂ could be described as:

- Ionic
- Covalent
- Ionic and Covalent
- Neither ionic nor covalent

1 Pt

<input type="radio"/> A	<input checked="" type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> 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
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11. The period in which the cell grows and performs regular functions is called:

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

1 Pt

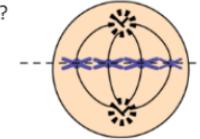
A	B	C	D	E
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12. Which of the following stages in mitosis is represented in this diagram?

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

1 Pt

A	B	C	D	E
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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
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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
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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
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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
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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
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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
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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
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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
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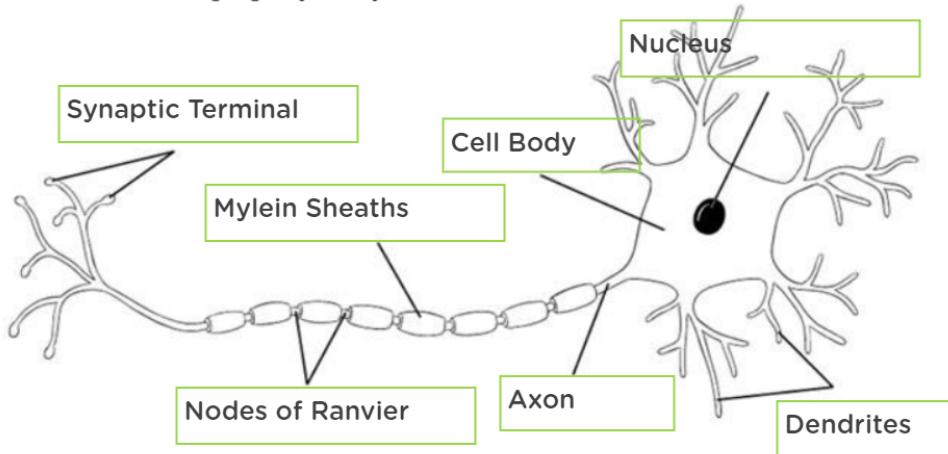
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B. MATCHING: Match the correct letter with the word. [10 marks]

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

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33. Complete the following chart. [12 marks]

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Chemical Formula	Chemical Name
FeCl ₃	Iron III Chloride
CCl ₄	Carbon Tetrachloride
CuS	Copper Sulfide
HBr (aq)	Hydrogen Bromide
Na ₂ CO ₃	Sodium Carbonate
LiBr	Lithium Bromide
Mg ₃ (PO ₄) ₂	Magnesium phosphate
Ag ₂ S	Silver sulfide
P ₂ O ₅	Diphosphorus pentoxide
Ca(OH) ₂	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]

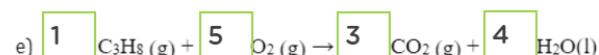
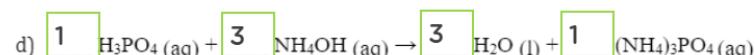
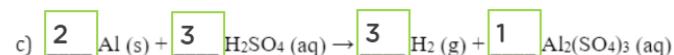
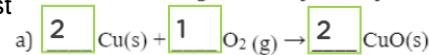
This gas can be tested by lighting a flame and observing for combustion

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

2HCl + Mg → MgCl₂ + H₂

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25. Balance the following reactions. [5 marks]



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

Synthesis**Decomposition****Single Displacement****Double Displacement****Complete Combustion**

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

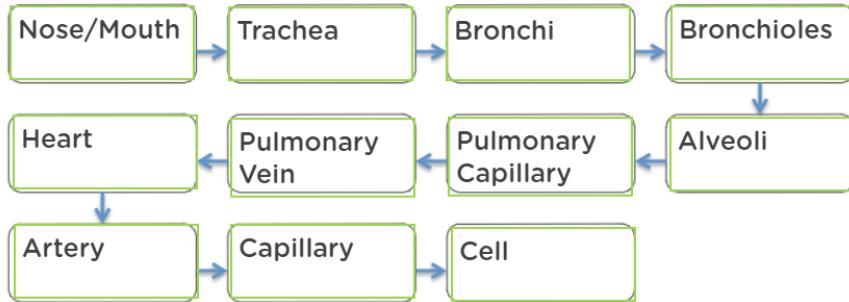
Artery	Structure: <input type="text"/>
	Function: <input type="text"/>
Vein	Structure: <input type="text"/>
	Function: <input type="text"/>
Capillary	Structure: <input type="text"/>
	Function: <input type="text"/>

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28. 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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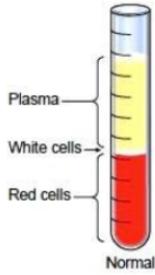


Word Bank:

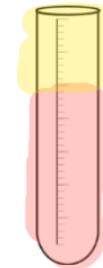
~~Nose/Mouth~~ ~~Capillary~~ ~~Artery~~ ~~Alveoli~~ ~~Heart~~ ~~Pulmonary Vein~~
~~Artery~~ ~~Pulmonary Capillary~~ ~~Alveoli~~ ~~Trachea~~ ~~Bronchioles~~

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]

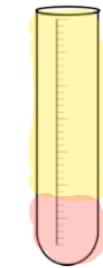
Healthy Individual



b. Blood Doping Athlete



c. Anemic Patient



d. Sick Person



BONUS: Balance the following reaction. [1 mark]

