Science Department

Mock Exam

Term 3 - 2023/2024

Grade: 5

Copy Number (4) Answer Sheet

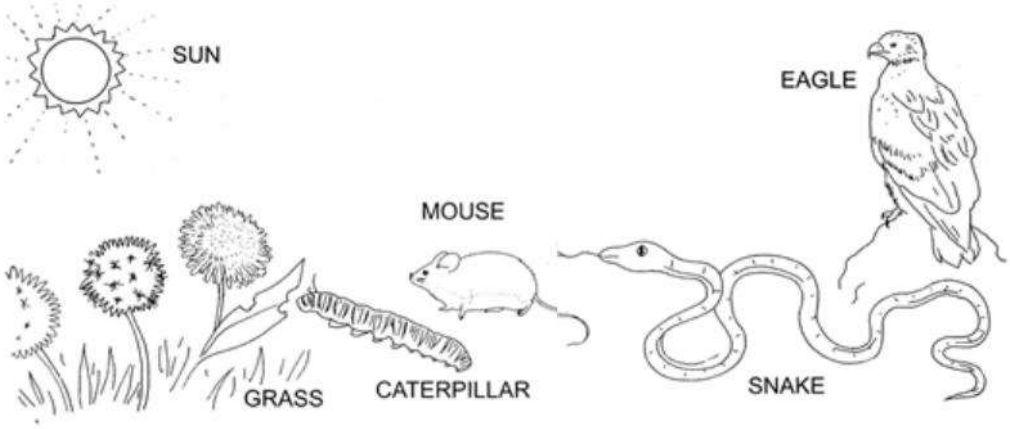
Levels (Bloom's Taxonomy)	Difficulty level	Symbol	Percentage
Remember	Easy- Medium	E,M	20
Understand	Easy- Medium	E,M	20
Apply	Easy- Medium-Difficult	E, M, D	20
Analyze	Easy- Medium-Difficult	E, M, D	20
Evaluate	Difficult	D	10
Create	Difficult	D	10

Part 1
20 Questions- Multiple choice

Q1.
Water is carried from the roots through the **stem** by tissues called ……..

a.	phloem
b.	xylem
c.	transpiration
d.	stomata

Q2.
The picture shows living things in an ecosystem. Which organism is a **producer**?



a.	grass
b.	snake
c.	mouse
d.	sun

Q3.
What is the main function of **stomata** in plants?

a.	To absorb nutrients from the soil.
b.	To store water for the plant.
c.	To carry out the gas exchange
d.	Help the plant grow taller.

Q4.
Which statement is **NOT** true about **invasive species**?

a.	It is a native species
b.	It harms the environment
c.	It spreads quickly
d.	It damages the economy and human health

Q5.
An earthworm in a forest ecosystem breaks down plant matter in the soil. This **job** is their……

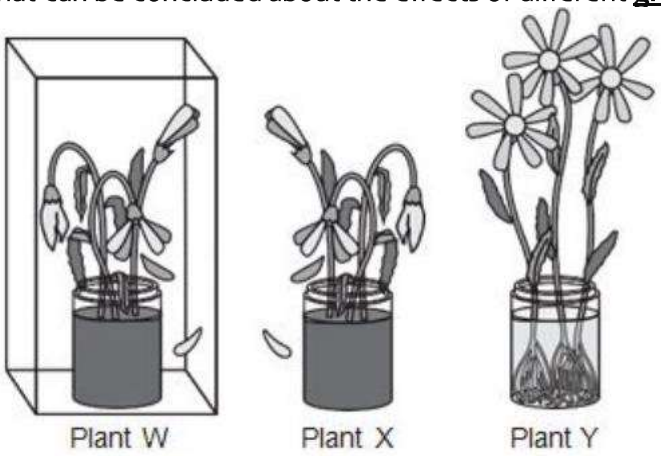
a.	habitat
b.	predator
c.	prey
d.	niche

Q6.
Plants need energy to acquire the nutrients they need to survive. The different parts of a plant's structure work together to keep the plant healthy. Which two functions do the **leaves** of a plant serve in obtaining the **nutrients** needed for **survival**?

a.	Leaves take in sunlight and oxygen.
b.	Leaves take in water and give off oxygen.
c.	Leaves take in sunlight and carbon dioxide.
d.	Leaves take in water and give off carbon dioxide.

Q7.
Grace and Linda investigate the effects of three growing conditions on plants. They place each of three plants that are the same size and type into its own container. The containers are the same size and shape.
1. Plant W is given soil and water and is put in a clear plastic box where all of the air is removed.
2. Plant X is given soil and left out in the open, but it does not receive water.
3. Plant Y is placed in water and left out in the open, but it does not receive soil.
The diagram shows how the plants look after a few days.

What can be concluded about the effects of different **growing conditions** on plants W, X, and Y?



What can be concluded about the effects of different growing conditions on plants W, X, and Y?

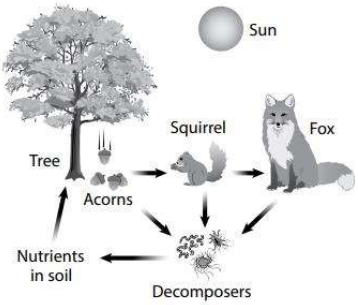
a.	The plants get their material for growth from soil
b.	The plants get their material for growth from soil and water
c.	The plants get their material for growth from air and water
d.	All of the above

Q8.
Which of these would you be doing if you are interacting with the **hydrosphere**?

a.	swimming
b.	Rock climbing
c.	Riding in an airplane
d.	Eating apple

Q9.

A student drew a model to show how **matter** moves in an ecosystem, as shown.
Which statement is supported by the student's model?



a.	Organisms get gases and water from the ecosystem.
b.	Matter transfers among organisms and the ecosystem.
c.	Organisms release heat energy back into the ecosystem
d.	Both energy and matter are recycled in an ecosystem.

Q10.
Organisms that are **eaten by other animals** are called _____.

a.	herbivores
b.	carnivores
c.	predator
d.	prey

Q11.
Decomposers are important to the health and balance of an ecosystem because they:

a.	Prey on overpopulated animals
b.	Breakdown plant and animal matter
c.	Are food for plants
d.	Produce oxygen for living

Q12.
How do **decomposers** help plants?

a.	They help with photosynthesis.
b.	They provide oxygen.
c.	They hold water.
d.	They enrich the soil.

Q13.
Which of the following is **NOT** part of Earth's **geosphere**?

a.	mountains
b.	soil
c.	rivers
d.	volcanoes

Q14.
In the given desert ecosystem, which of **Earth's systems** interact with each other?

a.	geosphere and hydrosphere only
b.	hydrosphere and atmosphere only
c.	atmosphere and biosphere only
d.	All of Earth's systems interact with each other.

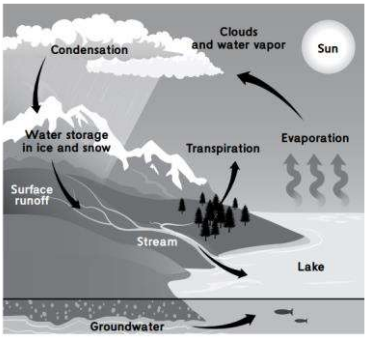
Q15.

Which part of the **water cycle** includes water vapor gas changing to a liquid?

a.	condensation
b.	evaporation
c.	precipitation
d.	transpiration

Q16.
This model of the **water cycle** can be used to explain how **Earth's systems interact**.

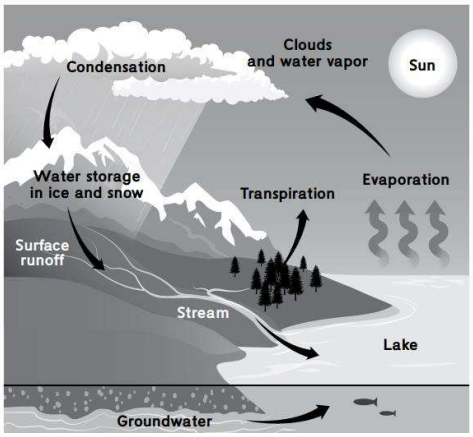
How do the **biosphere and hydrosphere** both contribute to the water cycle?



a.	They form liquid water.
b.	They cause surface runoff.
c.	They add water vapor to the air.
d.	They move water through the soil.

Q17.

This is a model of **the water cycle**. Which of them is **NOT** an **interaction** between **hydrosphere and biosphere.**

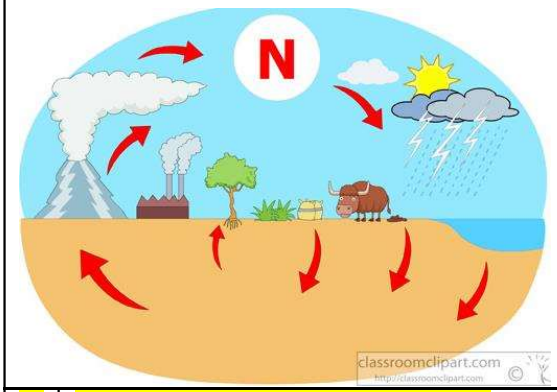


a.	Fish living in the ocean
b.	Flowing water carries rocks and soil.
c.	Providing water for plants
d.	Plants and animals stay alive with fresh water

Q18.
How do animals get **nitrogen** that is stored in the soil?

a.	Animals do not take in the nitrogen stored in the soil.
b.	Bacteria change the nitrogen into a gas that the animals breathe.
c.	The animals can eat the soil and absorb the nitrogen through their digestive system.
d.	Plants absorb the nitrogen from the soil and animals can eat the plants.

Q19.
In the **nitrogen cycle**, nitrogen cycles between _____.



a.	the air, organisms, and the soil
b.	water and plants
c.	the air and sunlight
d.	rocks, air, and the soil

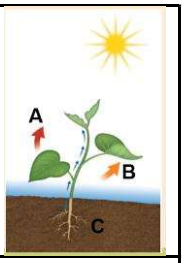
Q20.
Solid and molten rock are part of the …….

a.	Atmosphere
b.	geosphere
c.	biosphere
d.	hydrosphere

Part 2

10 Questions- Written questions

Q1.
The structure of a plant, including its roots and leaves, helps it make the energy it needs to obtain nutrients to survive.



1.a Name **the gas** needed by plants to make their food.
Carbon dioxide

1.b What is the function of the **roots**?
Roots absorb water and nutrients from the soil.

1.c Why should plants be planted with some space between one another?
Plants need space to grow and spread out the roots to absorb water and nutrients from the soil.

Q2.
Ameer investigated how the amount of sunlight affects **plant growth**. He calculated the average growth of three plants A, B and C. Assume that each plant was provided 20 mL of water per day.

	Amount of Sunlight Per Day	Height in Week 1	Height in Week 2	Height in Week 3	Average
Plant A	4 hours	1 cm	3 cm	6 cm	3.3 cm
Plant B	8 hours	1.5 cm	4 cm	8 cm	4.5 cm
Plant C	16 hours	1 cm	2 cm	3 cm	2.0 cm

2.a Which condition favored the most growth?
The plant B that was exposed to 8 hours of light showed the most growth.

2.b Which plant has the least growth? What can you infer from those results.
Plant C showed the least growth. When exposed to more sunlight, plants might need more water to grow.

2.c What happens to the growth of plant C, if It is provided with 60 ml of water per day?
The plant grow taller as it has enough water.

Q3.
The foxes and the rabbits in a **forest ecosystem** interact and affect each other population.

3a. What would happen to the population of rabbits if the fox population increased in a forest ecosystem?

The rabbit population will decrease.

3b. How do biotic factors in the forest ecosystem interact with the abiotic factor?
Biotic factors like animals and plants rely on water, air and sunlight to survive.

3c. What would happen if the plant population in the forest decreased?
The rabbit population will decrease and this will cause the fox population to decrease.

Q4.
Look at the image of a **forest ecosystem**.

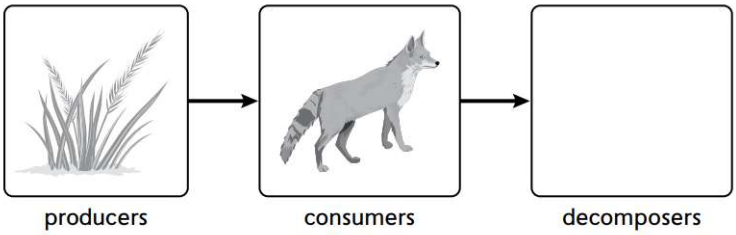
4a. Identify two **biotic and two abiotic factors** from the above picture.
Biotic factor…… tree, tiger……..

Abiotic factor…… air, water……..

4b. In the forest ecosystem tiger is **a predator**. What happens if the tiger is removed from the ecosystem?
The prey population will increase.

4c. Identify the **producers** from the above picture. Explain why they are called producers.
Trees. They produce their own food from sunlight.

Q5.
Review the diagram.



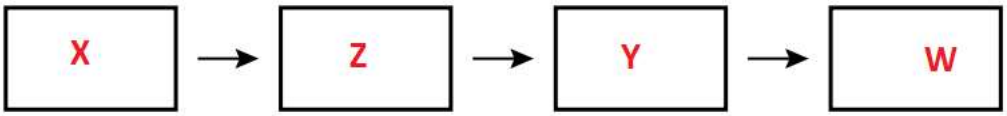
5a. Which of the following organisms should be added to the diagram to represent a **decomposer**?
Moss, mushroom, predator, prey.

5b. **Fungi** is a **decomposer**. What is the difference between fungi and plants?
Plants make their own food but fungi feeds on dead organisms.

5c. Decomposers are important to the health and balance of an ecosystem because they break down animals and plants matter.

Q6.
Decomposers are not shown in the ecosystem diagram and not listed in the table. The steps labeled W, X, Y, and Z are about how decomposers affect the **flow of matter** in the **desert ecosystem**, but they are not in the correct order.
W: Plants take up nutrients from the soil.
X: The hawk dies.
Y: Decomposers release nutrients into the soil.
Z: Decomposers break down the hawk into nutrients.

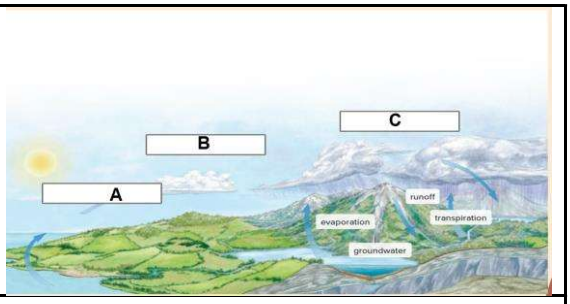
6a. Which sequence of steps best completes the diagram?



6b. What is the most important **role of decomposers** in an ecosystem?
Making nutrients available to plants is the most important role of decomposers in an ecosystem.

6c. What would happen to the ecosystem when the **decomposer**s are removed?
There are no nutrients in the soil, no plants and no decomposing of dead organisms.

Q7. Matter cycles in an ecosystem.



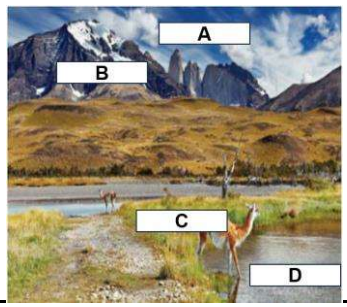
7a. Name the above cycle and what type of matter is cycling in this model.
Water cycle. Water is cycles in this.

7b. Identify the process A, B and C.
A……. evaporation……
B…….. condensation……..
C…….. precipitation……

7c. Identify the main source of energy for this cycle.

Sun

Q8.



The parts that make up Earth can be organized into four main systems **atmosphere, hydrosphere, biosphere and geosphere.**

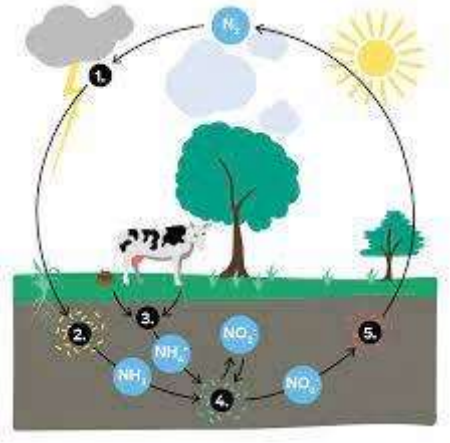
8a. Identify the Earth's system A, B, C and D.
A…… Atmosphere..
B…… Geosphere……
C…….. Biosphere……
D……. Hydrosphere……

8b. How do **hydrosphere** interact with the **biosphere** in the above model.
Animals drink water (any suitable answer is accepted)

8c. Are all four **systems** important in an ecosystem? Why or why not?
Yes all four systems are important because living organisms cannot live without water, air and land.

Q9.D

Air is made up of 78 percent nitrogen, but few living things can use nitrogen gas. The nitrogen cycle is the continuous circulation of nitrogen in the ecosystem.



9a. How do bacteria living on plant roots help plants to grow better?

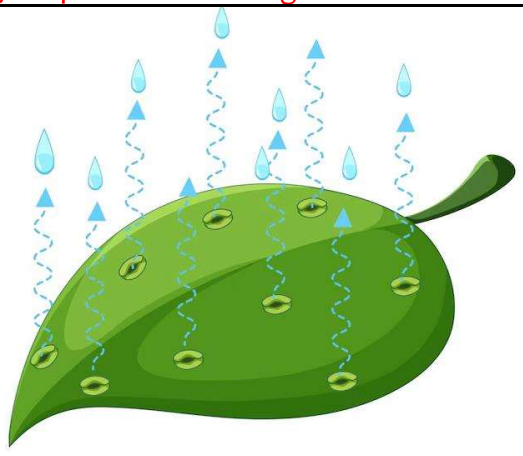
They change nitrogen gas into a form plant can use.

9b. How is nitrogen from the soil transferred to the organisms?

When animals eat plants or other plant-eating animals, they take in the stored nitrogen.

9c. Describe the role of decomposers and bacteria in the nitrogen cycle.

They help to return nitrogen into the atmosphere.



Q10.

Use the figure to answer the following questions.

10a. What is the name of the process when **<u>water evaporates</u>** from plants leaves?

Transpiration

10b. How do plants replace water after it evaporates from the leaves?

As water evaporates from the leaves, more water is carried from the bottom of the plant to the top. Water moves into the leaf, replacing the water that has evaporated.

10c. Name the structure in the plant which helps the evaporation of water.

Stomata

******* End of the Exam*******