

Science Department

Mock Exam

Term 3 - 2023/2024

Grade: 5

Copy Number (5)

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

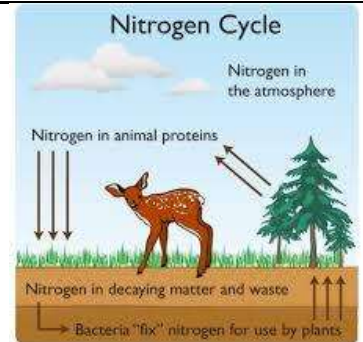
Part 1

20 Questions- Multiple choice

Q1. What is meant by the term transpiration?

- a. water loss from the roots
- b. water absorption from the roots
- c. water loss from the leaves
- d. water absorption from the leaves

Q2.
which of the following help(s) return nitrogen into atmosphere?



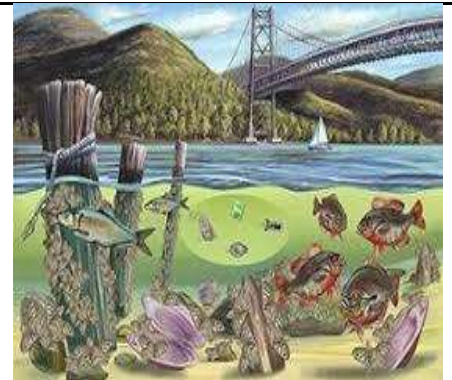
- a. Decomposer and bacteria
- b. Bacteria only
- c. decomposer only
- d. Virus and bacteria

Q3.
If many of the trees in a forest are cut down, how might this affect the animals living there?

- a. Animals have more space to live
- b. It would not affect the animals
- c. Animals decrease in number due to loss of food.
- d. The weather will become cooler

Q4.M

In a river ecosystem, which of the following would be considered biotic factor?



- a. The flow rate of the river.
- b. The rocks along the riverbed.
- c. The bacteria living in the water.
- d. The amount of sunlight the river receives.

Q5.M

If a squirrel and a bird live in the same tree, why might they not be in competition with each other?



- a. Because they do not share the same habitat.
- b. Because they have different niches within the same habitat.
- c. Because one is a bird and the other is a mammal.
- d. Because they eat the same food.

Q6.E-M

How could the introduction of a invasive fish species potentially affect the local fish population in a lake?

- a. lead to improved water clarity
- b. cause decrease in local fish populations due to competition for food.
- c. The invasive fish will likely become prey
- d. There will be no impact

Q7.M-D

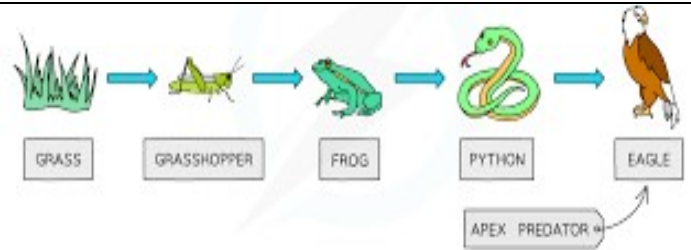
You're testing how soil, sand, cotton, and gravel affect plant growth. Which combination of these materials would be best for growing tomatoes, and why?



- a. Soil and Cotton: Soil has nutrients and holds water, and cotton keeps the soil moist and helps air get to the roots.
- b. Sand and Gravel: Sand drains water quickly, while gravel keeps the plant standing strong.
- c. Soil and Gravel: Soil provides nutrients and holds water, while gravel prevents erosion.
- d. Cotton and Sand: Cotton absorbs nutrients , and sand lets air reach the plant's roots.

Q8.M-D

If a forest ecosystem lost all its herbivores, how might this impact the carnivores?



- a. Carnivores would eat more plants.
- b. Carnivores would have less food available
- c. no effect on carnivores.
- d. Carnivores would start to eat more insects.

Q9.D

If a park has too many deer (prey), which are eating all the vegetation, what might be a natural way to manage this problem?



- a. Introduce more deer into the area.
- b. Remove all the deer from the park.
- c. Introduce a natural predator of the deer.
- d. Plant more trees and shrubs.

Q10.E-M

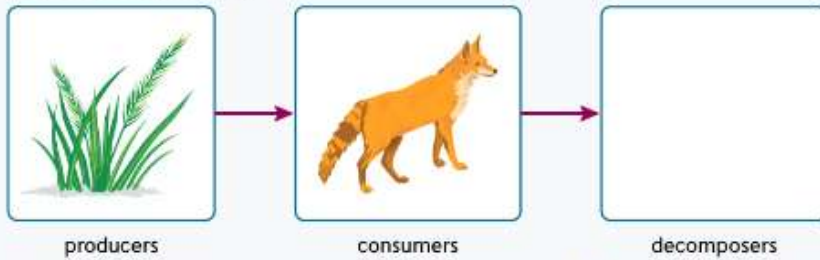
If a garden has poor soil quality, how might adding decomposers like earthworms and compost help improve it?



- a. Decomposers would eat the plants, reducing competition.
- b. Decomposers convert dead organic matter into nutrients that enrich the soil.
- c. They would attract more insects, increasing plant pollination.
- d. They would scare away animals that might eat the plants.

Q11.E-M

Review the diagram.



Which of the following organisms should be added to the diagram to represent a decomposer?

- a. Algae
- b. Fungi
- c. Prey
- d. Predator

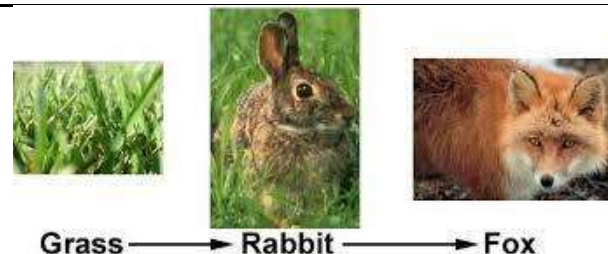
Q12.E-M

How does water evaporating from the leaves help the plant pull up more water from the soil

- a. Water loss creates a suction that pulls more water up from the roots
- b. Water evaporation cools down the leaves, but it doesn't help bring more water into the plant.
- c. As water evaporates, which allows leaves to absorb more sunlight by changing color.
- d. Water evaporation from the leaves strengthens the roots

Q13.M

If a long, cold winter reduces the number of plants in a forest, what might happen to the rabbit and fox populations?



- a. Both rabbit and fox populations will increase
- b. Rabbit populations will decrease, and fox populations will decrease as a result.
- c. Fox populations will rise quickly
- d. Rabbits will move to other areas

Q14.M

Which statement best explains how Earth's systems interact with one another?



- | | |
|----|---|
| a. | The systems operate independently and rarely affect each other. |
| b. | The atmosphere controls all other Earth systems. |
| c. | The hydrosphere and the geosphere have no interaction with the biosphere. |
| d. | The geosphere, hydrosphere, atmosphere, and biosphere are interconnected and influence one another. |

Q15.M

How do plants (biosphere) contribute to the formation of clouds (atmosphere)

- | | |
|----|---|
| a. | Plants absorb all the moisture, preventing cloud formation. |
| b. | Plants release oxygen, which creates clouds. |
| c. | Plants release water vapor into the air, contributing to cloud formation. |
| d. | Plants control temperature, which prevents cloud formation. |

Q16.M-D

Design a plant that would thrive in a wet, low-light environment. Describe a key feature it would have to optimize photosynthesis.

- | | |
|----|--------------------|
| a. | Broad, Thin Leaves |
|----|--------------------|



- | | |
|----|------------|
| b. | Deep Roots |
|----|------------|

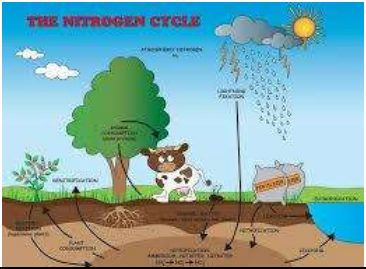


- | | |
|----|----------------|
| c. | Bright Flowers |
|----|----------------|

	
d.	Thick Bark 

Q17.D

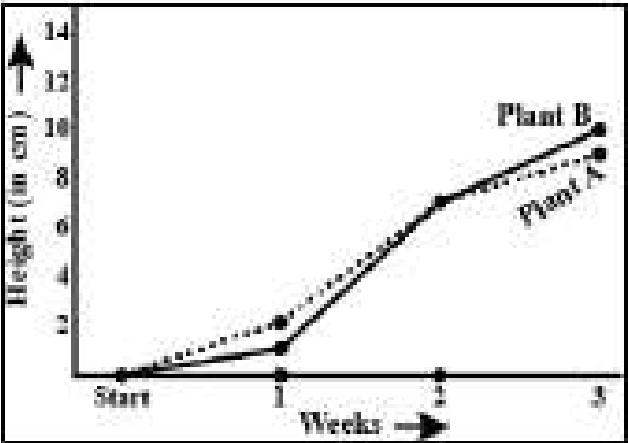
How might excessive use of fertilizers in agriculture affect the nitrogen and water cycles?



- | | |
|----|--|
| a. | It will increase nitrogen in the soil, leading to richer plant life |
| b. | Excessive nitrogen can run off into water bodies, causing algae blooms |
| c. | It will make the soil dry and stop the water cycle. |
| d. | Fertilizers turn into oxygen, enhancing the carbon-oxygen cycle. |

Q18.E-M

In the next graph , Were the two plants of the same height during any week shown here?



a.	At the end of 1st week
b.	At the end of 2nd week
c.	At the end of 3rd week
d.	At the end of 4th week

Q19.E

How might a drought affect the cycle of matter in an ecosystem?

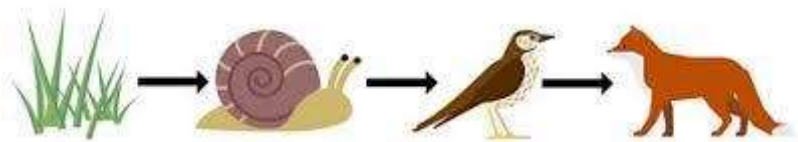


a.	less water means faster nutrient transfer.
b.	Drought increases the number of animals.
c.	Drought stops all cycles
d.	Drought reduces the amount of water available, impacting photosynthesis and nutrient absorption

Q20.E

Which of the following best describes the role of producers, consumers, and decomposers in an ecosystem?

Food Chain

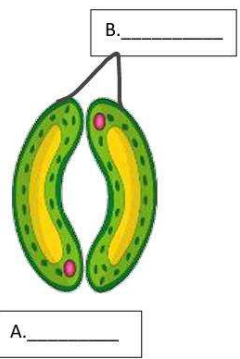


a.	Producers make their own food, consumers eat other organisms, and decomposers break down dead material.
b.	Producers eat other plants, consumers create their own food, and decomposers help plants grow.
c.	Producers and consumers are the same, while decomposers eat living plants.
d.	Producers clean the environment, consumers circulate air, and decomposers produce food for plants.

Part 2
10 Questions- Written questions

Q1.E

Look to the opposite picture answer the following:



1.a label of the opposite figure A. Guard cells B. Stomata

1.b Explain the importance of structure (B) .
Stomata allows CO_2 to come in and oxygen and water to go out of plant.

1.c In hot areas, this structure will be closed. Explain.
To prevent water loss

Q2.E-M

Look to the opposite figure and answer the following:



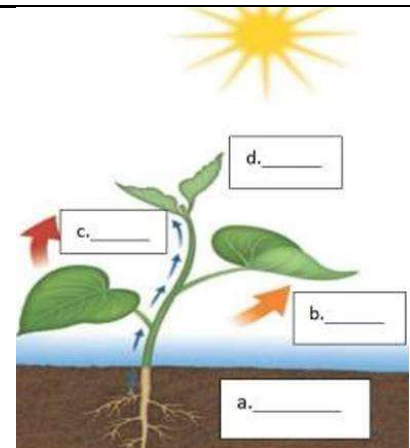
2.a Identify the organism found in the opposite picture.
Bacteria living in roots

2.b Explain their role in nitrogen cycle.
Change nitrogen gas to be used by plant.

2.c What factors responsible for growth and function of decomposers?
Moisture, warm temperature

Q3.E-M

Study the opposite diagram and answer the following:



3a. Label the opposite diagram

- a. Roots
- b. stomata
- c. water vapour
- d. leaves

3b. Can you explain the different parts of the plant that to move water, food, and air throughout the plant?

Roots absorb water, xylem takes it up, phloem carries food, stomata allows gas exchange.

3c. How might a plant adapt if it were in a very dry environment? Use the processes shown in the diagram to support your answer.

It will keep stomata closed during to save water inside the plant and prevent water loss or have thin leaves to have less stomata.

Q4.M

Study the following table calculate the average growth for the following plants and answer the following questions.

	Sunlight amount	Height in Week1	Height in Week2	Average
Plant A	4 hours	1 cm	4 cm	2.5
Plant B	8 hours	2 cm	6 cm	4
Plant C	16 hours	1.5 cm	3 cm	2.2

4a. Which plant had the most growth? Plant B

4b. Look at the growth rates for Plants A, B, and C. What is relation between sunlight and their growth?

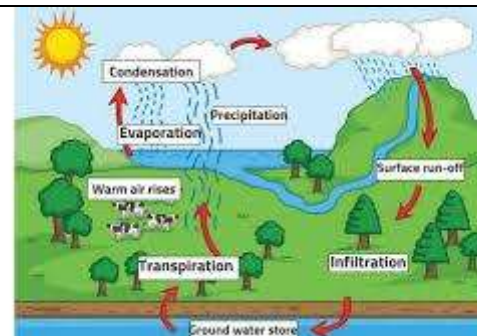
The more the sunlight, the more is photosynthesis and more is the growth of plant.

4c. If you were to grow a garden at home, how would you use the information from this experiment to decide how much sunlight your plants should get? Why

I will put plant in place with more sunlight to have optimum plant growth.

Q5.M-D

Data Analysis: Look at a diagram of the water cycle



5a. Describe the 4 stages in water cycle in order?

Evaporation, condensation, precipitation, collection

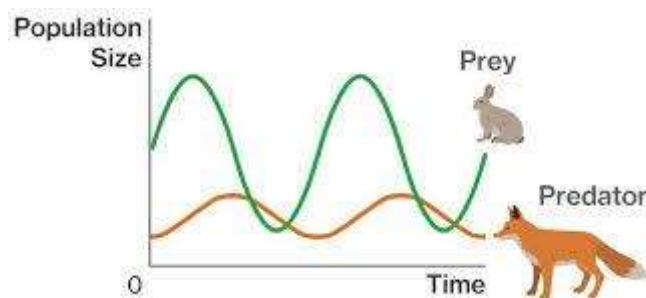
5b. Explain how transpiration contributes to the water cycle.

Transpiration causes water vapours to exit plant through stomata

5c. Predict what might happen to a local pond ecosystem if there was a prolonged drought.

The biotic factors of pond ecosystem like plants and fishes will die without water.

Q6.M-D



6a. How do the population trends of the foxes and rabbits affect each other?

The increase in number of foxes causes decrease in number of rabbits

6b. What could cause a sudden increase in the rabbit population?

Increase in grass and decrease in fox population.

6c. Predict how an introduction of an additional predator might balance the ecosystem.

IF predators are less the population of prey increases and fight for grass sources and deplete it, whereas if additional predator is introduced, it balances the ecosystem.

Q7.M-D

Scenario: A log decays in the forest



7a. Describe the role of decomposers in breaking down the log.

Decomposers break down log and return nutrient to soil.

7b. Explain how this process benefits the surrounding plants

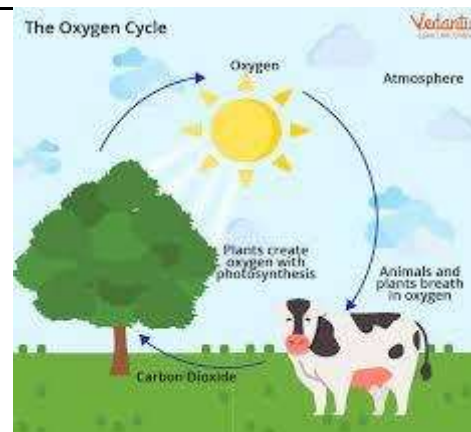
The soil around the log becomes fertile.

7c. What would happen if decomposers were removed from this environment?

Without decomposers, organic waste would accumulate, nutrient cycling would stop, and ecosystems would suffer

Q8.E

Consider the picture on carbon dioxide levels and oxygen levels in a forest.



8a. How do changes in carbon dioxide levels affect plant life in the forest?

If the carbon dioxide levels increase the plant get more to carry out photosynthesis.

8b. Why is the balance between these gases crucial for the ecosystem?

If the carbon dioxide gas increases the animals including humans will not be able to breathe, whereas if oxygen concentration increases then plants wont be able to carry out photosynthesis.

8c. Suggest a solution to save earth due to increased urbanization?

Plant more trees as more trees will neutralize more carbon dioxide released from factories and produce more oxygen.

Q9.D

Analyse the picture and answer:



9a. Identify the producer in this picture

Grass

9b. What does the picture represent?

Food web

9c. name 2 consumers in the picture?

Owl, frog, grass hopper, rabbit, mouse, snake

Q10.D

The picture shows a greenhouse to grow plants.



10a. Name the original source of energy for plants?

Sunlight

10b. What would happen if plants are grown close together?

Plants will compete for resources and ultimately growth is affected.

10c. what is importance of greenhouse for growing plants?

Greenhouse provides optimum temperature for plants and saves from pests.

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