

MockTest 2

Fuuvix

Question 1

A watering can is to small plants as a sprinkler system is to _____.

- ☐ A Big farms
- ☐ B Small pots
- ☐ C Single trees
- ☐ D Indoor plants

Question 2

Which flower is most likely pollinated by a hummingbird?

- ☐ A A small, white flower that smells sweet at night
- ☐ B A bright red flower with a long, tube shape
- ☐ C A yellow flower with a flat, wide shape
- ☐ D A purple flower with lots of tiny petals

Question 3

Scenario: A plant is grown in a dark room with no sunlight for several weeks. The plant's leaves gradually turn pale yellow.

What is the MOST likely cause of the leaves turning yellow?

- ☐ A The plant is producing too much chlorophyll.
- ☐ B The plant cannot perform photosynthesis without sunlight, leading to chlorophyll breakdown.
- ☐ C The plant is absorbing excess water from the soil.
- ☐ D The plant is growing new green leaves to replace the yellow ones.

Question 4

Complete the sentences below by choosing the best set of words.

Statement 1: During photosynthesis, plants absorb _____ from the atmosphere to produce glucose.
Statement 2: The green pigment called _____ captures sunlight energy for photosynthesis.
Statement 3: Plants release _____ as a byproduct of photosynthesis, which animals breathe in.

- ☐ A Oxygen, Chlorophyll, Carbon Dioxide
- ☐ B Carbon Dioxide, Chlorophyll, Oxygen
- ☐ C Nitrogen, Xanthophyll, Water
- ☐ D Water, Stomata, Glucose

Question 5

A scientist sets up an experiment to test how light affects photosynthesis in spinach leaves. She places one spinach leaf in a jar with water and exposes it to sunlight. Another spinach leaf is placed in a jar with water but kept in complete darkness. After 24 hours, she tests both leaves for the presence of starch using iodine solution. What is the MOST likely result?

- ☐ A The leaf exposed to sunlight turns blue-black, indicating starch is present.
- ☐ B The leaf kept in darkness turns blue-black, indicating starch is present.
- ☐ C Both leaves turn blue-black, indicating starch is present in both.
- ☐ D Neither leaf turns blue-black, indicating no starch is present.

Question 6

Which of the following accurately compares the inputs and outputs of photosynthesis and transpiration in plants?

- ☐ A Photosynthesis: CO_2 and H_2O as inputs, O_2 and glucose as outputs; Transpiration: H_2O as input, H_2O vapor as output
- ☐ B Photosynthesis: O_2 and glucose as inputs, CO_2 and H_2O as outputs; Transpiration: H_2O vapor as input, H_2O as output
- ☐ C Photosynthesis: CO_2 and H_2O as inputs, O_2 and ATP as outputs; Transpiration: H_2O and CO_2 as inputs, H_2O vapor as output
- ☐ D Photosynthesis: O_2 and glucose as inputs, CO_2 and H_2O as outputs; Transpiration: CO_2 as input, O_2 as output

Question 7

Complete the analogy: Taproot is to carrot as prop root is to _____.

- ☐ A Corn
- ☐ B Cactus
- ☐ C Grass
- ☐ D Pine tree

Question 8

Scenario: A carrot plant grows in an environment with a long dry season followed by a short wet season. The plant develops a thick, fleshy root that stores nutrients and water.

What is the MOST likely effect of this root adaptation on the carrot plant's survival?

- ☐ A The plant will grow taller than other plants during the dry season.
- ☐ B The plant will use the stored resources to survive the dry season when water is scarce.
- ☐ C The plant will produce more flowers during the wet season.
- ☐ D The plant will attract more pollinators due to its large root.

Question 9

The _____ of a root absorbs water and nutrients from the soil.

- ☐ A root cap
- ☐ B xylem
- ☐ C root hair
- ☐ D phloem

Question 10

Which of the following is the 'odd one out' when considering plants that reproduce vegetatively through spores?

- ☐ A Fern
- ☐ B Moss
- ☐ C Mushroom
- ☐ D Liverwort

Question 11

Seeds that are spread by wind often have lightweight and _____ structures to help them travel far.

- ☐ A fluffy
- ☐ B heavy
- ☐ C smooth
- ☐ D sticky

Question 12

Seeds that are spread by water often have a thick outer layer to help them _____.

- ☐ A float
- ☐ B stick
- ☐ C explode
- ☐ D fly

Question 13

A student plants two seeds in a garden. Seed A has a hard shell, and Seed B has a soft shell. Both seeds get water and sunlight. After a few days, what is MOST likely to happen?

- ☐ A Seed A will grow faster because its hard shell protects it.
- ☐ B Seed B will grow faster because its soft shell lets water in easily.
- ☐ C Both seeds will grow at the same speed because they get the same water and sunlight.
- ☐ D Neither seed will grow because the shells are different.

Question 14

Which plant has seeds that are most likely to be carried away by the wind?

- ☐ A Maple tree
- ☐ B Apple tree
- ☐ C Pea plant
- ☐ D Coconut palm

Question 15

Characteristic	P	Q
Cell Wall Composition	Chitin	Cellulose
Mode of Nutrition	Saprophytic	Photosynthetic
Ecological Role	Decomposer	Producer

Study the given table and select the option that correctly identifies P and Q.

- ☐ A P: Mushroom, Q: Oak Tree
- ☐ B P: Algae, Q: Bread Mold
- ☐ C P: Fern, Q: Yeast
- ☐ D P: Bacteria, Q: Grass

Question 16

Characteristic	P	Q
Rooted in Substrate?	Yes	No
Leaves on Water Surface?	Yes	No
Grows Fully Submerged?	No	Yes

Study the given table and select the option that correctly identifies P and Q.

- ☐ A P: Water Lily, Q: Hydrilla
- ☐ B P: Duckweed, Q: Lotus
- ☐ C P: Elodea, Q: Water Hyacinth
- ☐ D P: Cattail, Q: Seaweed

Question 17

Find the 'odd one out' in EACH group and choose the option that lists them correctly for Group 1 and Group 2.

Group 1: Mushroom, Yeast, Bread mold, Fern
Group 2: Lichen, Mycorrhizae, Penicillin, Algae

- ☒ A Group 1: Yeast, Group 2: Algae
- ☐ B Group 1: Fern, Group 2: Penicillin
- ☐ C Group 1: Bread mold, Group 2: Lichen
- ☐ D Group 1: Mushroom, Group 2: Mycorrhizae

Question 18

Which of these is NOT an adaptation commonly seen in plants growing on hills?

- ☐ A Needle-like leaves
- ☐ B Shallow root systems
- ☐ C Thick waxy cuticles
- ☐ D Flexible stems

Question 19

The table below shows the characteristics of taproots and fibrous roots in different plants:

Root Type	Depth (cm)	Number of Main Roots	Soil Type Preference
Taproot	50-200	1	Loose, deep soil
Fibrous Root	10-30	Many	Compact, shallow soil

Based on the table, which statement is TRUE about taproots compared to fibrous roots?

- ☐ A Taproots grow deeper in the soil than fibrous roots.
- ☐ B Fibrous roots have a single main root, while taproots have many.
- ☐ C Taproots prefer compact, shallow soil.
- ☐ D Fibrous roots grow deeper than taproots.

Question 20

The table below shows the root characteristics of four different plants and the environments they grow in:

Plant Name	Root Depth (cm)	Root Spread (cm)	Environment Type
Desert Cactus	300	50	Dry, Sandy
Mangrove Tree	100	500	Wet, Salty
Grass	20	200	Moist, Fertile
Oak Tree	400	1000	Temperate Forest

Based on the table, which plant is most likely to have a root system adapted to absorb water from deep underground?

- ☐ A Desert Cactus
- ☐ B Mangrove Tree
- ☐ C Grass
- ☐ D Oak Tree

Question 21

Which of the following is a common adaptation of plants growing on windy hills?

- ☐ A Thick, waxy leaves to reduce water loss
- ☐ B Flexible stems to bend without breaking
- ☐ C Deep taproots to anchor in loose soil
- ☐ D Brightly colored flowers to attract pollinators

Question 22

Why do many plants in the plains have broad, flat leaves?

- ☐ A To store extra water during dry seasons.
- ☐ B To maximize sunlight absorption for photosynthesis.
- ☐ C To protect themselves from grazing animals.
- ☐ D To help the plant grow taller than surrounding vegetation.

Question 23

Which adaptation helps desert plants reduce water loss through their leaves?

- ☐ A Having large, broad leaves to collect more sunlight
- ☐ B Developing thick, waxy coatings on their leaves
- ☐ C Growing deep roots to absorb water from far underground
- ☐ D Producing colorful flowers to attract pollinators

Question 24

_____ plants have roots anchored in the soil at the bottom of a water body, but their leaves and flowers float on the surface.

- ☐ A Floating
- ☐ B Underwater
- ☐ C Fixed
- ☐ D Terrestrial

Question 25

Which plant part is primarily used when we eat broccoli?

☐ A Flower

☐ B Stem

☐ C Leaf

☐ D Root

Question 26

Complete the sentences below by choosing the best set of words.

Statement 1: _____ plants have roots anchored in the soil at the bottom of the water body, but their leaves and flowers float on the surface.

Statement 2: _____ plants do not attach to the bottom and drift freely on the water's surface, often with specialized air-filled structures for buoyancy.

Statement 3: _____ plants grow entirely underwater, with leaves that are thin and flexible to withstand water currents.

☐ A Fixed, Floating, Underwater

☐ B Floating, Fixed, Underwater

☐ C Underwater, Floating, Fixed

☐ D Fixed, Underwater, Floating

Question 27

Scenario: Farmers in a region of India primarily grow rice and wheat, but during the summer months, they also cultivate pulses like lentils and chickpeas. These pulses are often grown in rotation with the main crops.

Based on this scenario, which of the following is the most valid inference about the role of pulses in Indian agriculture?

☐ A Pulses are grown only as a backup crop when rice and wheat fail.

☐ B Pulses help improve soil fertility by fixing nitrogen, benefiting subsequent crops.

☐ C Pulses require more water than rice and wheat, making them less sustainable.

☐ D Pulses are the most profitable crops for farmers in India.

Question 28

Decide if each statement about crops that need less water in India is True (T) or False (F). Choose the option that shows the correct answers for all statements:

Statement 1: Millets like bajra and ragi require very little water to grow.

Statement 2: All crops grown in India need heavy rainfall to survive.

Statement 3: Pulses like chickpeas and lentils are drought-tolerant crops.

Statement 4: Sugarcane is an example of a crop that needs very little water.

☐ A 1-T, 2-T, 3-T, 4-T

☐ B 1-T, 2-F, 3-T, 4-F

☐ C 1-F, 2-T, 3-F, 4-T

☐ D 1-F, 2-F, 3-F, 4-F

Question 29

Which of the following is a key benefit of using manure in farming?

- ☐ A It increases soil fertility by adding organic matter
- ☐ B It helps retain moisture in the soil
- ☐ C It improves the structure of the soil
- ☐ D All of the above

Question 30

Which of the following leaf adaptations is primarily used by climbing plants to attach to surfaces?

- ☐ A Broad, flat leaves to maximize sunlight absorption
- ☐ B Tendrils that coil around supports
- ☐ C Thick, waxy cuticles to reduce water loss
- ☐ D Spines or thorns for protection against herbivores

Answers - MockTest 2

Fuuvix

Question 1

A Big farms

Explanation:

A watering can is used for small-scale watering (like small plants), so the analogy compares it to a sprinkler system, which is used for large-scale watering (like big farms). The other options are incorrect because they describe smaller or inappropriate scales for sprinklers.

Question 2

B A bright red flower with a long, tube shape

Explanation:

Option b is correct. Hummingbirds are attracted to bright red flowers with long tubes that fit their beaks.

Option a is incorrect; sweet-smelling white flowers at night are usually pollinated by moths.

Option c is incorrect; flat yellow flowers are often pollinated by bees.

Option d is incorrect; purple flowers with many small petals are often pollinated by butterflies.

Question 3

B The plant cannot perform photosynthesis without sunlight, leading to chlorophyll breakdown.

Explanation:

Chlorophyll, the green pigment in leaves, is essential for photosynthesis. Without sunlight, the plant cannot produce energy through photosynthesis, and chlorophyll breaks down, causing the leaves to lose their green color and turn yellow. The other options are incorrect because lack of sunlight does not increase chlorophyll production, cause water absorption issues, or trigger new leaf growth in darkness.

Question 4

B Carbon Dioxide, Chlorophyll, Oxygen

Explanation:

Option b is correct because:

- Statement 1: Plants absorb 'Carbon Dioxide' (not Oxygen or Nitrogen) from the air to make glucose.
- Statement 2: 'Chlorophyll' is the green pigment that captures sunlight (Xanthophyll is a different pigment).
- Statement 3: Oxygen is released as a byproduct (not Water or Glucose).

Why other options are incorrect:

- Option a is wrong because plants absorb Carbon Dioxide, not Oxygen, and release Oxygen, not Carbon Dioxide.
- Option c is incorrect because Nitrogen isn't used in photosynthesis, and Xanthophyll doesn't primarily capture light energy.
- Option d is wrong because Water is absorbed through roots (not the air), and Stomata are pores, not pigments.

Question 5

A The leaf exposed to sunlight turns blue-black, indicating starch is present.

Explanation:

Photosynthesis requires light to produce glucose, which is then stored as starch. The leaf exposed to sunlight will photosynthesize and produce starch, turning blue-black when tested with iodine. The leaf in darkness cannot photosynthesize, so it will not produce starch and will not change color.

Question 6

A Photosynthesis: CO₂ and H₂O as inputs, O₂ and glucose as outputs; Transpiration: H₂O as input, H₂O vapor as output

Explanation:

Photosynthesis uses carbon dioxide (CO₂) and water (H₂O) as inputs to produce oxygen (O₂) and glucose (C₆H₁₂O₆) as outputs. Transpiration, however, is the process where water (H₂O) is absorbed by roots and released as water vapor (H₂O) through stomata. The other options incorrectly reverse inputs/outputs or include irrelevant molecules (e.g., ATP, CO₂ in transpiration).

Question 7

A Corn

Explanation:

A taproot is a single, thick primary root (like in a carrot), while prop roots are adventitious roots that grow above ground to support tall plants (like corn). The analogy compares a root type to a plant that typically has it.

Question 8

B The plant will use the stored resources to survive the dry season when water is scarce.

Explanation:

Storage roots, like those of carrots, are adapted to store water and nutrients during favorable conditions (wet season) to sustain the plant during unfavorable conditions (dry season). This is the most direct and logical effect of the adaptation. The other options are unrelated to the primary function of storage roots.

Question 9

C root hair

Explanation:

Root hairs are tiny extensions of root cells that increase the surface area for absorption of water and nutrients. The root cap protects the growing tip, while xylem and phloem transport materials within the plant.

Question 10

C Mushroom

Explanation:

Ferns, mosses, and liverworts are all non-flowering plants that reproduce vegetatively through spores. Mushrooms, however, are fungi and not plants, making them the odd one out in this group.

Question 11

A fluffy

Explanation:

Seeds dispersed by wind often have fluffy or feathery structures (like dandelion seeds) to catch the wind and travel long distances. Heavy, smooth, or sticky structures would not help with wind dispersal.

Question 12

A float

Explanation:

Seeds dispersed by water often have thick, buoyant outer layers to help them float and travel to new places.

Question 13

B Seed B will grow faster because its soft shell lets water in easily.

Explanation:

Seed B's soft shell allows water to enter more easily, helping it germinate faster. Seed A's hard shell slows down water absorption, delaying growth.

Question 14

A Maple tree

Explanation:

Option a is correct because maple seeds have wing-like structures (samaras) that help them spin and float in the wind.

Option b is incorrect; apple seeds are inside fruits and rely on animals for dispersal.

Option c is incorrect; pea seeds are in pods and do not have adaptations for wind dispersal.

Option d is incorrect; coconuts float in water but are too heavy for wind dispersal.

Question 15

A P: Mushroom, Q: Oak Tree

Explanation:

Based on the table:

P: Cell Wall Composition (Chitin), Mode of Nutrition (Saprophytic), Ecological Role (Decomposer) - characteristics of a Mushroom (fungi have chitin in their cell walls, are saprophytic, and act as decomposers).

Q: Cell Wall Composition (Cellulose), Mode of Nutrition (Photosynthetic), Ecological Role (Producer) - characteristics of an Oak Tree (plants have cellulose in their cell walls, are photosynthetic, and act as producers).

Option 'a' correctly matches Mushroom to P and Oak Tree to Q based on these characteristics. The other options misidentify one or both items by swapping or mismatching their properties.

Question 16

A P: Water Lily, Q: Hydrilla

Explanation:

Based on the table:

P: Rooted in Substrate (Yes), Leaves on Water Surface (Yes), Grows Fully Submerged (No) - matches Water Lily (rooted, floating leaves).

Q: Rooted in Substrate (No), Leaves on Water Surface (No), Grows Fully Submerged (Yes) - matches Hydrilla (free-floating, fully submerged).

Option 'a' is correct. Distractors misidentify: Duckweed (unrooted) cannot be P, Lotus (rooted with surface leaves) cannot be Q, Elodea (submerged) contradicts P, and Cattail (rooted emergent) doesn't fit Q.

Question 17

B Group 1: Fern, Group 2: Penicillin

Explanation:

In Group 1, 'Fern' is the odd one out because Mushroom, Yeast, and Bread mold are all fungi, while Fern is a plant.

In Group 2, 'Penicillin' is the odd one out because Lichen, Mycorrhizae, and Algae are examples of symbiotic relationships involving fungi (Lichen: fungi + algae/bacteria; Mycorrhizae: fungi + plant roots; Algae is part of lichen), whereas Penicillin is a product derived from fungi but not a symbiotic relationship itself.

Question 18

B Shallow root systems

Explanation:

Plants on hills often have needle-like leaves (to reduce water loss), thick waxy cuticles (to prevent dehydration), and flexible stems (to withstand strong winds). Shallow root systems, however, are not typical because they would make the plant unstable on steep slopes. Instead, hill plants usually develop deep or widespread roots to anchor themselves and prevent soil erosion. Thus, 'Shallow root systems' is the correct answer as it does NOT belong.

Question 19

A Taproots grow deeper in the soil than fibrous roots.

Explanation:

The table shows that taproots grow to a depth of 50-200 cm, while fibrous roots only reach 10-30 cm. This means taproots grow deeper in the soil than fibrous roots. The other options are incorrect because fibrous roots have many main roots (not one), taproots prefer loose, deep soil (not compact), and fibrous roots do not grow deeper than taproots.

Question 20

D Oak Tree

Explanation:

The Oak Tree has the deepest root depth (400 cm) among the plants listed, which suggests it is adapted to reach water sources far below the surface. While the Desert Cactus also has deep roots (300 cm), the Oak Tree's greater depth and its environment (temperate forest) imply a need for extensive water absorption from deeper soil layers.

Question 21

B Flexible stems to bend without breaking

Explanation:

Plants on windy hills often have flexible stems to withstand strong winds without breaking. Thick, waxy leaves (a) are more common in dry environments, deep taproots (c) are typical in deserts, and brightly colored flowers (d) are unrelated to wind resistance. Thus, the correct answer is (b).

Question 22

B To maximize sunlight absorption for photosynthesis.

Explanation:

Option b is correct. Broad, flat leaves provide a large surface area to capture sunlight efficiently, which is crucial for photosynthesis in the open plains.

Option a is incorrect; water storage is typically handled by specialized structures like succulent leaves or roots, not broad leaves.

Option c is incorrect; broad leaves would make plants more vulnerable to grazing, not protect them.

Option d is incorrect; leaf shape does not directly influence plant height—stem growth does.

Question 23

- B** Developing thick, waxy coatings on their leaves

Explanation:

Option b is correct. Thick, waxy coatings (cuticles) on leaves help desert plants reduce water loss by slowing evaporation.

Option a is incorrect; large leaves would increase water loss, not reduce it.

Option c is incorrect; while deep roots help access water, they do not directly reduce leaf water loss.

Option d is incorrect; flower production is unrelated to water conservation.

Question 24

- C** Fixed

Explanation:

Fixed aquatic plants are rooted in the substrate underwater, with their leaves and flowers emerging above the surface. This distinguishes them from floating (unrooted) or underwater (fully submerged) plants.

Question 25

- A** Flower

Explanation:

Broccoli is the flowering head of the plant, making the flower the primary part consumed. The stem and leaves are not the main edible portions in this case, and the root is not eaten at all.

Question 26

- A** Fixed, Floating, Underwater

Explanation:

Option a is correct because:

- Statement 1: 'Fixed' plants (e.g., water lilies) are rooted but have floating leaves.
- Statement 2: 'Floating' plants (e.g., duckweed) are not anchored and stay on the surface.
- Statement 3: 'Underwater' plants (e.g., eelgrass) grow fully submerged with adapted leaves.

Other options are incorrect because they misplace the plant types, leading to factual inaccuracies (e.g., 'Floating' plants cannot be rooted, and 'Underwater' plants do not float).

Question 27

- B** Pulses help improve soil fertility by fixing nitrogen, benefiting subsequent crops.

Explanation:

Pulses are leguminous crops that have nitrogen-fixing bacteria in their root nodules. When grown in rotation with rice and wheat, they enrich the soil with nitrogen, improving fertility for the next crop. This is a key reason for their cultivation alongside staple crops. The other options are incorrect: pulses are not just a backup crop, they typically require less water than rice/wheat, and profitability is not inferable from the given scenario.

Question 28

- B** 1-T, 2-F, 3-T, 4-F

Explanation:

Statement 1 is True: Millets like bajra and ragi are drought-resistant and require minimal water.

Statement 2 is False: Not all crops in India need heavy rainfall; some, like millets and pulses, are adapted to dry conditions.

Statement 3 is True: Pulses like chickpeas and lentils are known for their ability to grow with less water.

Statement 4 is False: Sugarcane is a water-intensive crop and requires a lot of irrigation.

Question 29

- D** All of the above

Explanation:

Manure enhances soil fertility by adding organic matter, improves water retention, and helps in better soil structure. Since all the options a, b, and c are correct, 'All of the above' is the right answer.

Question 30

B Tendrils that coil around supports

Explanation:

Option b is correct. Tendrils are specialized leaf or stem modifications that help climbing plants attach to surfaces for support.

Option a is incorrect; broad leaves are for photosynthesis, not climbing.

Option c is incorrect; waxy cuticles are adaptations for arid environments, not climbing.

Option d is incorrect; spines/thorns deter herbivores but do not aid in climbing.