3. HABITAT (Solutions)

TEACHING TASK (Page 29 – 32)

NEET LEVEL QUESTIONS (Multiple Choice Questions)

1) In which region of a pond would you expect to find larvae of mayflies and dragonflies?
Answer: d) Bottom
Explanation: Mayfly and dragonfly larvae are aquatic and typically found in the bottom region of ponds, where they inhabit sediment or detritus-rich areas, feeding on organic matter and hiding from predators.

2) Which of the following animals would you not typically find in a pond?
Answer: c) Bat
Explanation: Bats are terrestrial mammals that roost in trees or caves, not aquatic environments like ponds. Wall spiders, snails, and prawns can be associated with pond ecosystems.

3) What factors influence the distribution of organisms in different regions of a pond?
Answer: c) Food availability, oxygen levels, light penetration, and predation pressures
Explanation: The distribution of organisms in a pond is influenced by multiple factors, including food availability, oxygen levels, light penetration, and predation pressures, which create distinct ecological niches in different zones.

4) Which type of vegetation is commonly found at the water's edge in a pond?
Answer: c) Reeds and rushes
Explanation: Reeds and rushes are emergent plants commonly found at the pond's margins, where their roots are in shallow water or wet soil, providing habitat and stabilizing the shoreline.

5) What is the primary habitat of a fish according to the examples given?
Answer: c) In a pond
Explanation: Fish are aquatic animals primarily found in water bodies like ponds, as indicated by the context of pond ecosystems.

6) What type of habitat supports aquatic plants and animals?
Answer: a) Aquatic habitat
Explanation: Aquatic habitats, such as ponds, lakes, and rivers, support aquatic plants and animals adapted to live in water.

7) Which region of a pond has the highest risk of predation?
Answer: d) Surface
Explanation: The surface region of a pond is exposed to aerial and aquatic predators (e.g., birds like kingfishers), making it a high-risk area for predation.

8) What is the habitat of a mayfly according to the given examples?
Answer: a) In a pond
Explanation: Mayflies, particularly their larvae, are aquatic insects commonly found in ponds, as their life cycle is tied to aquatic environments.

9) What is the primary habitat of a lotus plant?
Answer: b) On the surface
Explanation: Lotus plants are rooted in the pond bottom, but their leaves and flowers float on the water's surface, making the surface their primary habitat.

10) Which of the following animals is commonly found in the bottom region of a pond?
Answer: c) Worms
Explanation: Worms, such as aquatic annelids, are commonly found in the bottom region of ponds, where they burrow in nutrient-rich sediment. Kingfishers, whirling beetles, and pond skaters are associated with other regions.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) Which habitats support a variety of aquatic life?
Answer: a) Water tanks, c) Saltwater lakes, d) Rivers, e) Seas
Explanation: Water tanks, saltwater lakes, rivers, and seas are all aquatic habitats that support diverse aquatic life. Temporary pools (b) may support some life but are less stable and diverse due to their transient nature.

12) What factors influence the distribution of organisms in different regions of a pond?
Answer: a) Food availability, b) Light levels, c) Oxygen levels, d) Predation pressures, e) Temperature
Explanation: All listed factors (food, light, oxygen, predation, and temperature) play critical roles in determining where organisms are found in a pond, as they create distinct microhabitats.

13) What are examples of organisms commonly found in the surface region of a pond?
Answer: b) Whirling Beetle, c) Pond Skater
Explanation: Whirling beetles and pond skaters are surface-dwelling insects adapted to move on the water's surface. Mayfly larvae (a) are found at the bottom, great water boatmen (d) in midwater, and leeches (e) at the bottom or margins.

Reason and Assertion Type

14) Assertion: Crabs inhabit both freshwater and marine environments.
Reason: They are adaptable creatures found in coastal regions and estuaries as well as freshwater habitats.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Crabs are highly adaptable and found in diverse aquatic environments, including freshwater ponds and marine estuaries, as the reason correctly explains.

14) Assertion: Pistia is a floating aquatic plant.
Reason: It is often seen in ponds, lakes, and marshes, where it floats on the water's surface.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Pistia (water lettuce) is a free-floating plant commonly found on the surface of ponds and lakes, as described in the reason.

15) Assertion: Rabbits are primarily terrestrial animals.
Reason: They are commonly found on land, inhabiting various terrestrial ecosystems.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Rabbits are terrestrial animals that live in various land-based ecosystems, such as grasslands and forests, as the reason explains.

Matrix Matching Type

17) Match the ecological interactions with their corresponding habitat regions in a pond.
Answer:

High light levels and oxygen, but increased predation risk → d) Surface

Sheltered areas with abundant food and breeding sites → c) Margins

Moderate light and oxygen, with diverse fish and invertebrates → a) Midwater

Low light, but rich in nutrients and detritus → b) Bottom
Explanation:

Surface: High light and oxygen but exposed to predators.

Margins: Sheltered with food and breeding sites for frogs and plants.

Midwater: Moderate conditions supporting fish and invertebrates.

Bottom: Low light but nutrient-rich, ideal for worms and mollusks.

Comprehension Type

Questions:

i. What types of animals are commonly found in trees?
Answer: Birds and insects (e.g., those crawling along the bark).
Explanation: The passage mentions birds nesting in trees and insects crawling along the bark as common tree inhabitants.

ii. Where do spiders typically build their webs in houses?
Answer: In corners.
Explanation: The passage states that spiders spin webs in corners of houses to catch prey.

iii. What makes larger habitats like lakes capable of supporting more biodiversity?
Answer: Larger habitats like lakes have a vast expanse of water, providing more space and resources to support a greater variety of species.
Explanation: The passage explains that larger habitats, like lakes, have greater capacity to support diverse life forms due to their size and resource availability.

LEARNERS TASK (Page 32 – 34)

NEET LEVEL QUESTIONS (Multiple Choice Questions)

1) Which of the following animals is commonly found at the surface of a pond?
Answer: c) Great Water Boatman
Explanation: Great water boatmen are aquatic insects that swim near the surface or midwater. Frogs are typically at the margins, crabs at the bottom or margins, and mollusks at the bottom.

2) What type of plants float completely on the surface of a pond?
Answer: c) Pistia (Water Lettuce)

Explanation: Pistia is a free-floating plant that remains entirely on the pond's surface, unlike reeds, submerged vegetation, or lotus (which is rooted).

3) Which of the following animals is commonly found in the midwater region of a pond?
Answer: None of the options are correct (likely an error in options). Fish would be a typical answer.
Explanation: Frogs are found at margins, leeches at the bottom or margins, grasshoppers are terrestrial, and cranes are birds not typically in midwater. Fish, not listed, are common in midwater.

4) What type of plants are rooted in the sediment and provide oxygen and habitat for aquatic life?
Answer: a) Submerged vegetation
Explanation: Submerged vegetation (e.g., Hydrilla, Pondweed) is rooted in sediment and oxygenates water while providing habitat. Reeds and rushes are emergent, lotus is surface-floating, and Hydrilla is a specific example of submerged vegetation.

5) Which of the following regions of a pond has low light but is rich in nutrients and detritus?
Answer: d) Bottom
Explanation: The bottom region of a pond has low light penetration but is rich in nutrients and detritus, supporting organisms like worms and mollusks.

6) Which animal is not commonly found near the edges of a pond?
Answer: c) Fish
Explanation: Fish are primarily found in midwater or deeper zones, while frogs, cranes, and crabs are commonly associated with pond margins.

7) What is the habitat of a crow according to the given examples?
Answer: a) In a tree
Explanation: Crows are birds that typically nest and perch in trees, as per the context of terrestrial habitats.

8) Which of the following organisms is not typically found in an alpine or montane habitat?
Answer: a) Tiger Prawn
Explanation: Tiger prawns are aquatic and found in coastal or freshwater environments, not alpine habitats. Snow leopards, earthworms, and dung beetles can be associated with alpine or montane regions.

9) What type of environment supports the most diverse range of organisms according to the text?
Answer: d) Seas
Explanation: The text implies that larger habitats like seas support the most diverse range of organisms due to their vast size and resources.

10) Coral reefs are primarily composed of:
Answer: a) Millions of tiny coral polyps
Explanation: Coral reefs are built by calcium carbonate secretions from tiny coral polyps, not vegetation, mollusks, or seaweed.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) Which organisms are commonly found in the surface region of a pond?
Answer: a) Dragonfly, e) Whirling Beetle
Explanation: Dragonflies (adults) and whirling beetles are found on the pond surface. Mayflies (larvae) are at the bottom, kingfishers are aerial predators, and snails are at the bottom or margins.

12) Which plants are found in the midwater region of a pond?
Answer: c) Hydrilla, d) Pondweed, e) Elodea
Explanation: Hydrilla, pondweed, and Elodea are submerged plants found in the midwater or deeper zones. Pistia and lotus are surface plants.

13) Which organisms inhabit the margins of a pond?
Answer: a) Frogs, b) Cranes, c) Crabs, d) Fish, e) Reeds and Rushes

Explanation: Frogs, cranes, crabs, and some fish inhabit the margins, which are also home to emergent plants like reeds and rushes.

Reason and Assertion Type

14) Assertion: Lotus is typically found in water.
Reason: Its roots are submerged while its leaves float on the surface.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Lotus plants are aquatic, with roots in the sediment and leaves on the surface, as the reason explains.

15) Assertion: Fish are exclusively aquatic animals.
Reason: They are adapted to live in water and cannot survive for extended periods out of it.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Fish are adapted to aquatic environments and cannot survive long out of water, as the reason states.

16) Assertion: Earthworms can be found in both soil and waterlogged areas.
Reason: They aid in soil aeration and are capable of surviving in moist conditions.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Earthworms thrive in moist soil and waterlogged areas, contributing to soil aeration, as the reason explains.

Matrix Matching Type

17) Match the organisms with their appropriate habitat regions in a pond.
Answer:

Dragonfly → c) Surface

Lotus → c) Surface

Great Water Boatman → a) Midwater

Mollusks → d) Bottom

Reeds and Rushes → b) Margins
Explanation:

Dragonfly (adults) and lotus are surface-dwelling.

Great water boatmen swim in midwater.

Mollusks inhabit the nutrient-rich bottom.

Reeds and rushes grow at the margins.

Comprehension Type

18) Questions:

i. What are some characteristics of the surface zone of a pond?
Answer: High light penetration, high oxygen levels, and increased risk of predation.
Explanation: The passage describes the surface zone as having deep light penetration and high oxygen but being vulnerable to predators.

ii. Describe the conditions found in the midwater zone of a pond.
Answer: Moderate light and oxygen levels, supporting a diverse array of fish and invertebrates.
Explanation: The passage notes that the midwater zone has moderate conditions, making it suitable for diverse aquatic life.

iii. How do the margins of a pond contribute to its biodiversity?
Answer: The margins provide sheltered areas with abundant food and breeding sites, supporting organisms like frogs and plants like reeds and rushes.
Explanation: The passage highlights the margins as rich in food and breeding opportunities, enhancing pond biodiversity.

TEACHING TASK (Page 37-40)

NEET LEVEL QUESTIONS (Multiple Choice Questions)

1) What is the primary habitat of bees and wasps according to the passage?
Answer: c) Branches
Explanation: Bees and wasps typically build nests in tree branches, as trees provide suitable nesting sites.

2) Where would you typically find snakes on a tree?
Answer: a) In the branches
Explanation: Snakes, especially arboreal species, are often found coiled around or moving through tree branches.

3) Which of the following animals might use a tree for nesting?
Answer: c) Bird
Explanation: Birds commonly build nests in trees, unlike caterpillars, crabs, or spiders, which have different habits.

4) What type of plants might you find growing on the bark of a tree besides mosses?
Answer: d) Ferns
Explanation: Epiphytic ferns can grow on tree bark, similar to mosses, unlike reeds, submerged vegetation, or lotus, which are aquatic.

5) In which region of a tree would you expect to find monkeys and squirrels?
Answer: a) Branches
Explanation: Monkeys and squirrels are arboreal and primarily inhabit tree branches for climbing and foraging.

6) Where would you typically find birds nesting on a tree?
Answer: b) Branches
Explanation: Birds typically build their nests in tree branches, which provide safety and accessibility.

7) What type of plants might you find growing around the base of a tree?
Answer: c) Ferns
Explanation: Ferns are terrestrial plants that can grow in shaded areas around tree bases, unlike mosses (on bark), submerged vegetation, or lotus (aquatic).

8) Which animal is commonly found on or around a tree, but not typically inside it?
Answer: c) Snake
Explanation: Snakes are found on or around trees (e.g., coiled on branches) but do not live inside them, unlike caterpillars or spiders, which may inhabit tree crevices.

9) What type of habitat does a tree provide for various organisms according to the passage?
Answer: c) Terrestrial habitat
Explanation: Trees are terrestrial ecosystems that support a variety of organisms, as described in the passage.

10) Which of the following organisms is commonly found on the bark of a tree?
Answer: c) Caterpillar
Explanation: Caterpillars are often found on tree bark or leaves, unlike monkeys or birds, which are primarily in branches.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) What types of animals might share our living spaces in houses?
Answer: a) Dogs, b) Cats, c) Ants, d) Spiders, e) Cockroaches
Explanation: Dogs, cats, ants, spiders, and cockroaches are all commonly found in houses, either as pets or as pests.

12) What plants might people grow inside their houses?
Answer: a) Money plants, b) Crotons, e) Orchids
Explanation: Money plants, crotons, and orchids are common indoor plants. Roses and tulips are typically grown outdoors.

13) What types of animals might be found in orchards?
Answer: a) Birds, b) Insects, c) Snakes, d) Small mammals, e) Amphibians
Explanation: Orchards support a variety of animals, including birds, insects, snakes, small mammals (e.g., rodents), and amphibians (e.g., frogs).

Reason and Assertion Type

14) Assertion: Houses serve as habitats for both humans and pets like dogs and cats.
Reason: Houses provide shelter and safety for various living beings.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Houses provide a safe habitat for humans and pets, as the reason explains.

15) Assertion: Indoor plants in houses contribute to air quality but do not provide habitat for insects.
Reason: Indoor plants can attract insects like butterflies and bees.
Answer: Assertion is false, Reason is true.
Explanation: Indoor plants can improve air quality and may attract insects, contradicting the assertion that they do not provide habitat for insects.

16) Assertion: Orchards, with their cultivated fruit trees, do not support any plant or animal species other than the fruit trees themselves.
Reason: Orchards support a variety of plants and animals, contributing to agricultural biodiversity.
Answer: Assertion is false, Reason is true.
Explanation: Orchards support diverse plants and animals, contradicting the assertion but aligning with the reason.

Matrix Matching Type

17) Match the ecological interactions with their corresponding habitat regions in an orchard.
Answer:

Cultivation of mango trees → b) Inland regions

Presence of mangroves → a) Coastal regions

Suitability for vine cultivation → c) Rayalseema

Distinct characteristics of vegetation → d) Telangana
Explanation:

Mango trees are cultivated in inland regions like Telangana.

Mangroves are found in coastal regions.

Rayalseema is suitable for vine cultivation (e.g., grapes).

Telangana has distinct vegetation characteristics.

Comprehension Type

18) Questions:
i. Why do birds and squirrels visit trees, according to the passage?
Answer: For refuge and food.
Explanation: The passage states that birds and squirrels seek shelter and food in tree branches.

ii. What role do mosses play in the ecosystem of a tree?
Answer: Mosses contribute to the tree's overall health and biodiversity.
Explanation: The passage notes that mosses create miniature ecosystems and support tree health.

iii. How does the environment provided by trees during the rainy season support the growth of mosses?
Answer: The moist environment during the rainy season allows mosses to thrive on tree bark.
Explanation: The passage mentions that mosses grow in the moist conditions provided by trees during the rainy season.

LEARNERS TASK (Page 40 – 42)

NEET LEVEL QUESTIONS (Multiple Choice Questions)

1) In which region of a tree would you typically find bees and wasps building their nests?
Answer: a) Branches
Explanation: Bees and wasps typically build nests in tree branches, which provide stable and safe locations.

2) What type of plants are often found growing on the bark of trees?
Answer: c) Mosses
Explanation: Mosses are commonly found on tree bark, especially in moist conditions, unlike aquatic plants like reeds or lotus.

3) Which animal might you find coiled around the trunk of a tree?
Answer: b) Snake
Explanation: Snakes, particularly arboreal ones, may coil around tree trunks or branches for movement or rest.

4) What is the primary habitat of a caterpillar according to the passage?
Answer: c) On the leaves of a tree
Explanation: Caterpillars are primarily found on tree leaves, where they feed, as implied by the passage.

5) Which of the following animals is least likely to be found in a tree?
Answer: c) Crab
Explanation: Crabs are aquatic or terrestrial (not arboreal), unlike spiders, monkeys, and squirrels, which are associated with trees.

6) Where would you typically find monkeys and squirrels on a tree?
Answer: c) In the branches
Explanation: Monkeys and squirrels are arboreal and primarily inhabit tree branches for climbing and foraging.

7) What type of plants might you find growing on the bark of a tree during the rainy season?
Answer: c) Mosses
Explanation: Mosses thrive on tree bark during the rainy season due to increased moisture, as per the passage.

8) Which animal might use a tree for climbing and foraging?
Answer: d) Squirrel
Explanation: Squirrels are well-known for climbing trees and foraging for food in branches, as described in the passage.

9) What type of habitat does a tree provide for various organisms?
Answer: b) Terrestrial habitat
Explanation: Trees provide a terrestrial habitat for organisms like birds, squirrels, and insects, as per the passage.

10) In which region of a tree would you expect to find ants and spiders?
Answer: d) Bark
Explanation: Ants and spiders are commonly found on tree bark, where they forage or build webs, as implied by the passage.

NEET ADVANCED LEVEL QUESTIONS

More than One Answer Type

11) Which organisms are commonly found on or around trees?
Answer: a) Birds, b) Monkeys, c) Snakes, d) Ants, e) Mosses
Explanation: All listed organisms (birds, monkeys, snakes, ants, and mosses) are associated with trees, as per the passage.

12) Where might you find birds in a tree?
Answer: e) All of the above
Explanation: Birds can be found nesting in branches, in tree hollows, perching on branches, or hiding in foliage, as described.

13) What organisms might use a tree for climbing and foraging?
Answer: a) Monkeys, b) Squirrels, c) Snakes, d) Caterpillars
Explanation: Monkeys, squirrels, snakes, and caterpillars use trees for climbing and foraging, unlike mosses, which are plants.

Reason and Assertion Type

14) Assertion: Trees provide habitats for a variety of organisms, including birds and monkeys.
Reason: Different regions of a tree offer unique niches for organisms to inhabit.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Trees support diverse organisms by providing varied niches, as the reason explains.

15) Assertion: Mosses growing on tree bark contribute to the ecological significance of trees.
Reason: Mosses thrive in the moist environment provided by trees.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Mosses enhance tree ecosystems by thriving in moist conditions, as the reason states.

16) Assertion: Spiders on trees contribute to biodiversity by controlling insect populations and serving as prey for birds and other predators.
Reason: Spiders play a role in the ecosystem of a tree by controlling insect populations and serving as prey for birds and other predators.
Answer: Both Assertion and Reason are true, and the Reason is the correct explanation of the Assertion.
Explanation: Spiders contribute to tree ecosystems by controlling pests and serving as prey, as the reason explains.

Matrix Matching Type

17) Match the organisms with their appropriate habitat regions on a tree.
Answer:

Birds → c) Branches

Ants and spiders → d) Bark

Monkeys and squirrels → c) Branches

Caterpillars → b) Leaves

Bees and wasps → c) Branches
Explanation:

Birds, monkeys, squirrels, bees, and wasps are primarily found in branches.

Ants and spiders inhabit bark.

Caterpillars are found on leaves.

Comprehension Type

18) Questions:
i. Why is it important to prioritize the care of pet animals, according to the passage?
Answer: To ensure their well-being and maintain a reciprocal bond of affection and loyalty.
Explanation: The passage emphasizes that caring for pets is a responsibility that fosters a strong bond.

ii. How do pets respond to the care and concern shown by their owners?
Answer: Pets respond with affection and loyalty, expressed through gestures like licking, wagging tails, or staying close.
Explanation: The passage describes pets showing love through specific behaviors in response to care.

iii. What do the interactions between humans and their pets evoke, according to the passage?

Answer: A sense of companionship and joy.
Explanation: The passage highlights that pet interactions create a unique bond, evoking companionship and joy.