

Aquaculture: A Deep Dive

Aquaculture · Answer Key · 21 Questions

1. Which of these aquatic animals is commonly farmed using extensive aquaculture methods, relying on natural food sources and minimal intervention?

- A) Atlantic Salmon
- B) Tilapia
- C) Oysters**
- D) Shrimp

2. What environmental benefit is often associated with seaweed aquaculture?

- A) It significantly increases ocean acidity.
- B) It helps to absorb excess carbon dioxide and nutrients.**
- C) It directly competes with coral reefs for sunlight.
- D) It produces methane emissions at a high rate.

3. Which method of aquaculture involves cultivating organisms in enclosures within natural bodies of water, such as bays or lagoons?

- A) Pond culture
- B) Raceway culture
- C) Cage culture**
- D) Recirculating aquaculture systems (RAS)

4. What is a primary environmental concern related to intensive finfish aquaculture in open water?

- A) Over-enrichment of water with dissolved oxygen.
- B) Depletion of wild fish stocks due to feed requirements.**
- C) Increased biodiversity due to introduced species.
- D) Significant reduction in nutrient runoff.

5. Which of these bivalve mollusks is a significant species in global aquaculture due to its ability to filter large volumes of water?

- A) Scallops
- B) Mussels
- C) Clams
- D) All of the above**

6. The practice of aquaculture where organisms are grown on land in tanks or ponds is known as:

- A) Mariculture
- B) Aquaponics
- C) Inland aquaculture**
- D) Offshore aquaculture

7. What is a potential ecological benefit of restoring degraded coastal wetlands through the cultivation of certain aquatic species?

- A) Increased water salinity.
- B) Enhanced habitat for native wildlife and improved water quality.**
- C) Reduced coastal erosion.
- D) Promotion of invasive species establishment.

8. Which common aquaculture species requires a complex life cycle involving both freshwater and saltwater phases, making its farming challenging?

- A) Catfish
- B) Trout
- C) Shrimp**
- D) Barramundi

9. What is the primary purpose of using artificial reefs in some offshore aquaculture operations?

- A) To increase water pollution.
- B) To attract predators to the farmed species.
- C) To provide settlement substrate for farmed organisms and support biodiversity.**
- D) To decrease the natural food supply for wild fish.

10. Which of these aquaculture systems aims to integrate fish farming with plant cultivation, where fish waste provides nutrients for plants?

- A) Recirculating aquaculture systems (RAS)
- B) Aquaponics**
- C) Flow-through systems
- D) Submerged cage culture

11. What is a key advantage of using recirculating aquaculture systems (RAS) from an environmental perspective?

- A) High water consumption and discharge.
- B) Minimal water usage and reduced waste discharge.**
- C) Increased susceptibility to external pollutants.
- D) Lower energy efficiency compared to traditional methods.

12. Which species, farmed extensively in Asia, is known for its ability to tolerate a wide range of salinity and temperature conditions?

A) Rainbow Trout

B) Tilapia

C) Atlantic Cod

D) Pacific Oysters

13. What is a common feed source used in aquaculture that can contribute to the depletion of wild fisheries if not managed sustainably?

A) Algae

B) Plant-based proteins

C) Fishmeal and fish oil

D) Insect larvae

14. The cultivation of marine organisms in saltwater environments is specifically termed:

A) Freshwater aquaculture

B) Land-based aquaculture

C) Mariculture

D) Brackish water aquaculture

15. What environmental impact can result from the use of antibiotics in intensive aquaculture if not properly managed?

A) Increased biodiversity in surrounding waters.

B) Development of antibiotic-resistant bacteria.

C) Reduced nutrient loading in the environment.

D) Improved water clarity.

16. Which type of organism, when farmed, can act as 'ecosystem engineers' by improving water quality through filter feeding?

A) Finfish

B) Crustaceans

C) Bivalve mollusks

D) Seaweed

17. What is a significant challenge in farming freshwater species like catfish in ponds regarding water management?

A) Maintaining low levels of dissolved oxygen.

B) Preventing water evaporation and managing water exchange.

C) Reducing water salinity.

D) Increasing water temperature.

18. Which of these farmed species has a carnivorous diet, meaning its feed often requires other animal protein sources?

- A) Oysters
- B) Mussels
- C) Tilapia
- D) Atlantic Salmon**

19. What is a key consideration when siting an aquaculture farm to minimize its impact on the local marine ecosystem?

- A) Proximity to shipping lanes.
- B) Strong currents that can disperse waste effectively.
- C) Absence of sensitive habitats like seagrass beds and coral reefs.**
- D) High levels of natural predation.

20. The process of cultivating aquatic organisms in water that is a mixture of fresh and saltwater is known as:

- A) Marine aquaculture
- B) Freshwater aquaculture
- C) Brackish water aquaculture**
- D) Land-based aquaculture

21. What natural phenomenon can pose a significant risk to coastal aquaculture operations, such as shrimp farms?

- A) Prolonged periods of intense cold.
- B) The arrival of freshwater floods.
- C) Sudden changes in salinity and water levels due to storms and tides.**
- D) Excessive sunlight.