



**WP5 / D5.2**

## **Aquaculture MC Question Bank**



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1. What is the main purpose of feeding in aquaculture?

Options:

- a. To maximize the growth of fish and shellfish
- b. To reduce water pollution in farming facilities
- c. To maintain good health and immunity in the animals
- d. To reduce the costs of aquaculture production



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2. Which factors affect the growth of fish in aquaculture facilities?

Options:

- a. Water temperature
- b. Type of feed
- c. Light conditions
- d. Number of fish in the facility

3. What is the difference between recirculating aquaculture and traditional aquaculture?

Options:

- a. Recirculating uses a closed water system, while traditional often uses open systems.
- b. Recirculating requires more space than traditional.
- c. Recirculating offers better control over water quality than traditional.
- d. Recirculating can reduce water consumption compared to traditional.

4. Which diseases are most common in salmon farming?

Options:

- a. Salmon parasites (*Gyrodactylus salaris*)
- b. Ichthyophthiriasis (a fish disease caused by parasites)
- c. Cardiovascular diseases
- d. Viral hemorrhagic septicemia (VHS)

5. What is an important environmental challenge related to aquaculture?

Options:

- a. Overfishing of wild fish for feed
- b. Discharge of nutrients into the surrounding environment
- c. Increased biodiversity in the local area
- d. Spread of diseases to wild fish populations

7. Improve feed quality and nutrition

8. Increase fish density in the facility

9. Implement better hygiene and biosecurity measures

10. Use vaccines to prevent diseases

11. What is the importance of water quality in aquaculture production?

Options:

- a. Water quality affects the growth and health of the fish
- b. Poor water quality can lead to increased disease risk
- c. Water quality has no impact on feed consumption
- d. Good water quality is crucial for maintaining oxygen levels

12. What types of feed are commonly used in shrimp farming?

Options:

- a. Pellets made from fishmeal and soybean meal
- b. Vegetable feed mixtures
- c. Live feed such as Artemia and rotifers
- d. Dry feed made from cereal products

13. What are the most common species farmed in aquaculture globally?

Options:

- a. Salmon
- b. Cod
- c. Shrimp
- d. Halibut

14. How does fish density in an aquaculture facility affect their growth and health?

Options:

- a. High density can lead to stress and disease
- b. High density reduces the risk of diseases
- c. Low density provides better access to feed and oxygen
- d. Low density can improve fish health and well-being

15. What is a "smolt" in salmon farming?

Options:

- a. An adult salmon
- b. A young salmon that is ready for seawater
- c. A type of feed
- d. A disease

16. What methods are used to monitor the health and well-being of farmed fish?

Options:

- a. Increased biodiversity in the system
- b. Better resource utilization and reduced waste
- c. Higher production costs
- d. Improved water quality through natural filtration

17. What are the benefits of integrated aquaculture, where fish and plants are farmed together?

Options:

- a. Increased biodiversity in the system
- b. Better resource utilization and reduced waste
- c. Higher production costs
- d. Improved water quality through natural filtration

18. How can sustainable practices be implemented in aquaculture?

Options:

- a. Use environmentally friendly feed and reduce reliance on wild fish
- b. Implement recirculated water systems to minimize water consumption
- c. Increase fish density to maximize output
- d. Regularly monitor and improve water quality

19. What are the key requirements for the certification of aquaculture products?

Options:

- a. Compliance with environmental standards
- b. Documentation of animal welfare and health
- c. Higher production costs without quality requirements
- d. Traceability throughout the production chain

20. What is the difference between freshwater and saltwater aquaculture?

Options:

- a. Freshwater aquaculture takes place in lakes and rivers, while saltwater aquaculture occurs in the sea
- b. Freshwater aquaculture requires more oxygen than saltwater aquaculture
- c. Freshwater species include salmon and trout, while saltwater species include cod and shrimp
- d. Saltwater aquaculture generally has higher production costs than freshwater aquaculture

21. What is the "farming cycle" in aquaculture, and what phases are included in it?

Options:

- a. Refers to the process from egg to adult fish
- b. Includes only the feeding phase
- c. Includes hatching, juvenile stage, and growth phase
- d. Ends with the harvesting of the fish

22. What technological innovations have had the greatest impact on aquaculture in recent years?

Options:

- a. They have no effect
- b. They are crucial for fish health and growth
- c. Only water flow is important
- d. Higher oxygen levels are always harmful

23. How can waste and pollution be minimized?

Options:

- a. Implement recirculated water systems
- b. Use chemical additives in feed
- c. Optimize feeding routines to reduce surplus
- d. Conduct regular monitoring of water quality

24. What are the most common feeding strategies used in aquaculture?

Options:

- a. Hand feeding of fish
- b. Automatic feeding with feed dispensers
- c. Feeding based on time and quantity
- d. Feeding only with live feed

25. How do light conditions affect the growth of farmed fish?

Options:

- a. Light conditions affect the fish's circadian rhythm and activity levels
- b. Dark conditions promote growth in all fish species
- c. Proper light can stimulate appetite and feed consumption
- d. Light conditions influence reproduction and larval development

26. What are the key economic factors that affect profitability in aquaculture?

Options:

- a. Feed prices and availability
- b. Labor costs and workforce competence
- c. Water quality and temperature
- d. Market prices for aquaculture products

27. How can genetic selection be used to improve farmed species?

Options:

- a. Select individuals with desired traits for breeding
- b. Use random mating to increase genetic variation
- c. Identify and breed fish with high growth rates
- d. Reduce disease resistance through selection

28. What is the "farming cycle," and what phases are included in it?

Options:

- a. It includes the egg phase, larval stage, smoltification, and growth phase.
- b. It only consists of the growth phase and smoltification.
- c. It involves the preparation of juveniles and breeding.
- d. It includes both feeding and health monitoring of the fish.

29. How do water flow and oxygen levels affect fish farming?

Options:

- a. Water flow helps distribute feed evenly
- b. High oxygen levels promote growth
- c. Low water flow can lead to stagnation
- d. Oxygen levels have no significance for fish farming

**30. What are the most common methods for breeding farmed fish?**

**Options:**

- a. Traditional breeding (selecting fish with desired traits to produce offspring)
- b. Genetic selection (using genetic analysis to select fish with specific traits)
- c. Crossbreeding (combining different species or strains to achieve desired traits)
- d. Cloning (producing genetically identical individuals to ensure uniform traits)

**31. How can technology, such as sensors and automation, be used in aquaculture?**

**Options:**

- a. Water quality monitoring (sensors can regularly measure parameters such as pH, temperature, and oxygen to ensure favorable conditions)
- b. Automated feeding (feeding systems can be programmed to provide the fish with the right amount of feed at specific times)
- c. Fish tracking (technology can be used to monitor the health and growth of the fish throughout the farming cycle)
- d. Manual monitoring (technology is not necessary, as manual methods are sufficient for monitoring)

**32. What is the importance of having a good management plan for aquaculture projects?**

**Options:**

- a. Sustainable resource use (A good management plan ensures that resources are used sustainably, protecting the environment)
- b. Increased production efficiency (Planning helps in better resource utilization and increased production efficiency)
- c. Reduced risk of disease (A good management plan includes measures to monitor and manage diseases, protecting fish health)
- d. No importance for the project's success (A management plan is not necessary to achieve success in aquaculture)

**33. How can aquaculture contribute to global food security?**

**Options:**

- a. Increased fish production (Aquaculture can meet the growing demand for fish and seafood, helping to secure the food supply)
- b. Reduction of overfishing (By producing fish in controlled environments, aquaculture can reduce pressure on wild fish stocks)
- c. Nutrient-rich food (Fish is an important source of protein and omega-3 fatty acids, which are essential for health and nutrition)
- d. No impact on the local economy (Aquaculture has no significance for the local economy or food security)

**34. How can water quality management improve fish farming operations?**

**Options:**

- a. By ensuring optimal oxygen levels for fish health
- b. By reducing the risk of disease and stress in fish
- c. By controlling water temperature to enhance growth rates
- d. By increasing the density of fish in the farming system



**1. What is aquaculture?**

**Options:**

- a. Cultivation of fish and shellfish in controlled environments
- b. Farming of shrimp and crabs in ponds
- c. Farming of marine species in closed systems
- d. Production of food from aquatic resources
- e. Cultivation of plants in aquatic environments
- f. Farming of freshwater and saltwater fish
- g. Production of algae for food and biofuels

**2. What types of organisms are commonly farmed in aquaculture?**

**Options:**

- a. Salmon
- b. Shrimp
- c. Cod
- d. Oysters
- e. Algae
- f. Crab
- g. Seafood and mussels

**3. What is the difference between aquaculture and wild fishing?**

**Options:**

- a. Aquaculture involves the farming of organisms in controlled environments.
- b. Aquaculture is always more sustainable than wild fishing.
- c. Aquaculture can provide a more stable production of seafood.
- d. Aquaculture can help reduce pressure on wild fish stocks.
- e. Aquaculture can implement technology for monitoring.
- f. Aquaculture can use specific types of feed for favorable growth.

**4. What role do algae play in aquaculture?**

**Options:**

- a. Algae serve as an important food source for many aquatic organisms.
- b. Algae help improve water quality by absorbing nutrients and CO<sub>2</sub>.
- c. Algae are used to produce bioplastics and other industrial products.
- d. Algae can help reduce disease risk by strengthening the immune system of farmed fish.

**5. What is sustainable aquaculture?**

**Options:**

- a. It involves farming fish and shellfish in a way that minimizes environmental impact.
- b. It focuses on using natural resources without overexploiting them.
- c. It includes the use of chemical additives to increase production.
- d. It takes animal welfare into account and ensures that farmed organisms have good living conditions.

**6. How does aquaculture impact the marine ecosystem?**

**Options:**

- a. It can lead to overfishing of natural stocks by competing for resources.
- b. It can cause eutrophication of water through nutrient discharge from feed and waste.
- c. It has no impact on the marine ecosystem.
- d. It can introduce diseases and parasites, which can affect wild fish stocks.

**7. What is a farmed larva?**

**Options:**

- a. It is the early stage of a fish or shellfish that has been bred in captivity.
- b. It is an adult fish that has been caught in the wild.
- c. Farmed larvae require specific types of feed for optimal growth and development.
- d. Farmed larvae are often used in aquaculture to initiate the farming process.

**8. What factors influence the growth of farmed fish?**

**Options:**

- a. Water quality, including oxygen levels and pH
- b. Water temperature
- c. The number of people working at the aquaculture facility
- d. The quality and composition of the feed

**9. What is the feed conversion ratio?**

**Options:**

- a. It is a measure of how efficiently a fish converts feed into body weight
- b. It indicates the ratio between the amount of feed used and the weight of fish produced
- c. It is an indicator of fish health in aquaculture facilities
- d. It refers to the amount of water used in fish farming

**10. How can diseases spread in aquaculture?**

**Options:**

- a. Through direct contact between infected and healthy organisms
- b. Via polluted water or sediment in aquaculture facilities
- c. With chemical additives
- d. By transmission of diseases from wild fish to farmed fish

**11. What are the most common diseases in farmed fish?**

**Options:**

- a. Fungal infections
- b. Bacterial infections
- c. Parasites
- d. Influenza

**12. How can water quality be controlled in aquaculture?**

**Options:**

- a. Regular testing of pH levels
- b. Monitoring of temperature
- c. Control of oxygen levels
- d. Addition of dyes for aesthetic purposes

**13. What is a biofilter, and what role does it play?**

**Options:**

- a. A biofilter removes harmful substances from the water
- b. The biofilter contains beneficial bacteria that break down waste
- c. It helps maintain a stable temperature in aquatic systems
- d. The biofilter helps maintain water quality in aquaculture

**14. How can aquaculture contribute to food security?**

**Options:**

- a. Aquaculture can increase the availability of protein-rich foods
- b. It reduces pressure on wild fish stocks
- c. Aquaculture can create jobs in local communities
- d. It is a method of producing food without the need for water

**15. What is polyculture in aquaculture?**

**Options:**

- a. Polyculture involves growing multiple species together in the same system
- b. It can contribute to better resource and space utilization
- c. Polyculture reduces the risk of diseases in cultured species
- d. It is a method for growing only one species for maximum yield

**16. What environmental impacts can arise from aquaculture?**

**Options:**

- a. Release of nutrients that can lead to eutrophication
- b. Destruction of natural habitats to establish aquaculture facilities
- c. Spread of diseases to wild fish populations
- d. Reduction of CO2 emissions from transportation of food products

**17. What is an aquaculture facility, and how can it affect local fish populations?**

**Options:**

- a. An aquaculture facility is a controlled environment for cultivating fish and shellfish
- b. It can lead to genetic contamination of wild fish populations
- c. Aquaculture facilities can contribute to increased food production for local communities
- d. They have no impact on local ecosystems

**18. What is genetic modification, and how is it used in aquaculture?**

**Options:**

- a. Genetic modification involves altering the DNA of organisms to achieve desired traits
- b. It is used in aquaculture to develop fish species that grow faster
- c. Genetic modification can improve fish resistance to diseases
- d. It is a method to reduce yields in aquaculture facilities

**19. What is an invasive species, and how can it affect aquaculture?**

**Options:**

- a. An invasive species is a species introduced to a new habitat and spreads rapidly
- b. Invasive species can compete with local species for resources
- c. They can improve biological diversity in aquatic systems
- d. Invasive species can introduce diseases that affect farmed fish

**20. How can climate change affect aquaculture production?**

**Options:**

- a. Climate change can lead to changes in water temperature that affect fish growth
- b. Increased ocean acidification can harm marine organisms such as shellfish and corals
- c. Changes in rainfall patterns can improve water quality in aquaculture systems
- d. Climate change can increase the frequency of extreme weather events such as floods and droughts

**21. What is eutrophication, and how can it affect aquaculture?**

**Options:**

- a. Eutrophication is a process where water systems receive too many nutrients, especially nitrogen and phosphorus
- b. It can lead to algal blooms that reduce light penetration in the water
- c. Eutrophication improves water quality and supports aquaculture production
- d. It can lead to oxygen depletion in the water, which harms fish and other organisms

**22. What is a trophic level, and how is it related?**

**Options:**

- a. A trophic level refers to a position in the food chain where organisms share similar nutritional characteristics
- b. Trophic levels include producers, consumers, and decomposers
- c. Each trophic level has an equal amount of energy available to organisms
- d. Trophic levels affect how energy and nutrients flow through an ecosystem

**23. How can aquaculture contribute to economic development in coastal communities?**

**Options:**

- a. Aquaculture can create jobs in fish farms and related industries
- b. It can increase revenue from seafood exports
- c. Aquaculture contributes to reducing seafood costs by lowering production
- d. It can stimulate the development of infrastructure and services in coastal communities

**24. What is integrated culture?**

**Options:**

- a. Integrated culture is a method where multiple species are cultivated together in a system to maximize resource use
- b. It can include combinations of fish, shellfish, and plants in the same environment
- c. Integrated culture reduces the need for feed by using waste from one species as nutrition for another
- d. It is a method that focuses solely on the cultivation of one species for maximum yield

**25. How can the use of antibiotics in aquaculture be reduced?**

**Options:**

- a. Implementation of better biosecurity practices in aquaculture facilities
- b. Use of vaccines to prevent diseases in farmed fish
- c. Increased use of antibiotics to ensure rapid fish growth
- d. Selection of disease-resistant fish species for farming

**26. What are the most important nutrients for farmed fish?**

**Options:**

- a. Proteins, which are essential for growth and muscle development
- b. Carbohydrates, which provide energy to the fish
- c. Vitamins and minerals, which support the immune system and general health
- d. Caffeine, which enhances appetite in farmed fish

**27. How can aquaculture affect biodiversity?**

**Options:**

- a. Aquaculture can lead to genetic pollution of wild populations through the escape of farmed fish
- b. It can contribute to the loss of natural habitats when areas are converted into aquaculture facilities
- c. Aquaculture can increase biodiversity by introducing new species into the ecosystem
- d. It can affect local ecosystems by altering food chains and competition dynamics

**28. What is a sustainable feeding practice in aquaculture?**

**Options:**

- a. Use of feed made from sustainable ingredients, such as plant-based proteins
- b. Reduction of fish oil and fishmeal in feed mixtures to conserve wild fish populations
- c. Increased use of antibiotics to ensure rapid growth of fish
- d. Implementation of feeding strategies that minimize waste and maximize feed utilization

29. What is the future of aquaculture, given the increasing population and food demand?

Options:

- a. Aquaculture is expected to play a key role in meeting the growing demand for sustainable seafood
- b. Technological advancements can improve production efficiency and reduce environmental impact
- c. It will likely lead to an increase in the use of chemical additives to boost growth
- d. Increased focus on sustainable practices can help conserve marine ecosystem

30. What are the main challenges associated with waste management?

Options:

- a. Waste management can lead to pollution of soil, water, and air.
- b. Lack of recycling can increase pressure on natural resources.
- c. Waste management has no impact on public health.
- d. The costs associated with waste management can be an economic burden for the local community.



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**1. What is an aquaculture facility?**

**Options:**

- a. An aquaculture facility is a controlled environment where fish, shellfish, or plants are cultivated.
- b. It can be both land-based and marine facilities.
- c. Aquaculture facilities are always located in freshwater.
- d. The facility may include systems for water recycling and waste management.

**2. What types of aquaculture facilities are there?**

**Options:**

- a. Flow-through systems
- b. Recirculating aquaculture systems (RAS)
- c. Air-based aquaculture facilities
- d. Offshore cage systems

**3. What is the difference between open and closed aquaculture systems?**

**Options:**

- a. Open aquaculture systems are directly connected to water sources, while closed systems are completely isolated from the surroundings.
- b. Closed aquaculture systems have better control over water quality than open systems.
- c. Open systems allow the natural supply of nutrients, while closed systems require artificial supply.
- d. Closed aquaculture systems are always more cost-effective than open systems.

**4. How does a recirculating aquaculture system (RAS) work?**

**Options:**

- A. RAS uses filters to remove waste and maintain water quality.
- B. The system continuously circulates the water to provide the fish with a stable environment.
- C. RAS does not require oxygen supply, as it is sufficient in the closed system.
- D. Biological filters in RAS convert harmful substances into less harmful forms.

**5. What is a floating aquaculture facility?**

**Options:**

- a. A floating aquaculture facility is a platform that floats on the surface of the water and is used for fish farming.
- b. They are always located in enclosed harbors to protect against waves and currents.
- c. Floating aquaculture facilities can be mobile and moved to different locations as needed.
- d. The facilities provide the fish with access to natural water and currents, which can improve growth.

**6. What materials are commonly used in the construction of facilities?**

**Options:**

- a. Concrete is a common material for building pools and structures in aquaculture
  - b. Wood is often used for floating platforms and frames due to its light weight
  - c. Plastic is rarely used in aquaculture, as it is not durable in aquatic environment
  - d. Steel is often used in constructions that require high strength and durability
- 
- a. Water quality determines the types of filters and purification systems that need to be installed in the facility
  - b. Higher levels of pollution require more complex designs to manage waste
  - c. Water temperature does not affect the design, as it can always be adjusted independently of the facility
  - d. The pH level of the water can influence the choice of materials and construction methods

**8. What is a swamp, and what role does it play?**

**Options:**

- a. A swamp is a wetland area with still or slow-moving water
- b. The swamp functions as a natural water purification system
- c. The swamp is always dry and has no significance for the ecosystem
- d. The swamp is an important habitat for many animal and plant species

**9. How can technology be used to monitor water parameters?**

**Options:**

- a. Sensors can measure pH levels, temperature, and oxygen levels in the water
- b. Drones can be used to collect water samples from hard-to-reach areas
- c. Satellite images cannot be used to monitor water quality
- d. Automated systems can provide real-time data on water pollution

10. What is a biofilter, and how does it work?

Options:

- a. A biofilter uses microorganisms to purify water or air from pollutants
- b. A biofilter consists of chemical substances that break down pollutants instantly
- c. Biofilters are often used in wastewater treatment, aquaculture, and ventilation systems
- d. Microorganisms in the biofilter break down harmful substances through biological degradation

11. How can oxygen levels be controlled in a facility?

Options:

- a. Use air stones or diffusers to add oxygen to the water
- b. Monitor oxygen levels with sensors and adjust air supply as needed
- c. Reduce water flow to conserve oxygen
- d. Install mechanical agitators or water systems to increase oxygen uptake

12. What is the significance of pH levels?

Options:

- a. The pH level affects chemical reactions in water and soil
- b. A stable pH level is important for the health of organisms in water and soil
- c. The pH level has no significance for water quality or the environment
- d. Extreme pH values can be harmful to plants, animals, and microorganisms

13. How can an aquaculture facility be designed to minimize the spread of disease?

Options:

- a. Ensure good water quality and adequate oxygen supply
- b. Place the fish close together to reduce stress
- c. Use separate tanks or sections to isolate sick individuals
- d. Implement biosecurity measures such as filtration and disinfection of water

14. How can solar energy be used in a facility?

Options:

- a. Solar panels can be used to generate electricity for pumps and monitoring systems
- b. Solar heating systems can be used to regulate the water temperature in the facility
- c. Solar energy can replace the need for all other energy sources, regardless of weather conditions
- d. Battery storage can be used to ensure power supply from solar energy at night or during bad weather

15. What is a water pump, and what role does it play?

Options:

- a. A water pump transports water from one place to another
- b. Water pumps are used to regulate water flow in systems such as aquaculture and water purification
- c. Water pumps can help maintain oxygen levels by circulating the water
- d. A water pump only helps filter water, not to move it

16. How can sensors be used in aquaculture technology?

Options:

- a. Sensors can measure water quality, such as pH, oxygen levels, and temperature
- b. Motion sensors can monitor fish behavior and health
- c. Sensors are only used to control the light levels in a facility
- d. Automated sensors can send real-time data to a monitoring system for a quick response

17. What is a drainage system, and why is it important?

Options:

- a. A drainage system transports and treats wastewater to prevent pollution
- b. Drainage systems help protect the environment by removing harmful substances from wastewater
- c. Drainage systems are unnecessary, as water naturally cleans itself over time
- d. Well-designed drainage systems reduce the risk of disease and bacteria spread

18. How can sustainable practices be implemented in the design of aquaculture facilities?

Options:

- a. Use recirculating aquaculture systems (RAS) to minimize water consumption and waste
- b. Incorporate natural filters such as plants and biofilters to purify the water
- c. Avoid monitoring water quality, as natural processes regulate themselves
- d. Optimize feed usage to reduce waste and environmental impact

19. What is a culture container, and what types are there?

Options:

- a. A culture container is a structure used to hold farmed fish or other aquatic organisms
- b. Culture containers only exist as open nets in the sea
- c. There are closed systems such as land-based tanks and recirculating aquaculture systems (RAS)
- d. Culture containers can be floating nets, tanks on land, or cages in lakes and rivers

20. How can artificial intelligence be used in aquaculture technology?

Options:

- a. AI can analyze fish behavior to detect disease or stress early
- b. AI can optimize feeding systems to reduce waste and improve growth
- c. AI has no practical use in aquaculture and is only used in theoretical studies
- d. AI can monitor water quality and predict changes for better facility management

21. What is the significance of temperature control?

Options:

- a. Temperature affects the metabolism and growth of organisms in water
- b. Stable temperature helps reduce stress and disease in farmed organisms
- c. Temperature has no impact on water quality or biological processes
- d. Proper temperature control ensures optimal oxygen uptake and water chemistry

22. How can facilities be designed to handle extreme weather conditions?

Options:

- a. Use strong materials and structures that can withstand strong winds and waves
- b. Install automated monitoring systems to predict and respond to weather changes
- c. Place the facility in open and unprotected areas to expose it as much as possible to natural forces
- d. Design flexible and secure anchoring systems to prevent damage and operational loss

23. How do seawater aquaculture facilities differ from freshwater aquaculture facilities?

Options:

- a. Seawater aquaculture requires more corrosion-resistant materials due to the salt content in the water
- b. Freshwater aquaculture is always larger than seawater aquaculture
- c. The species being farmed vary, as some fish species can only tolerate saltwater, while others thrive in freshwater
- d. Circulation systems and water quality control must be adapted to the differences in salinity and oxygen uptake

24. What is aquaculture netting, and what function does it serve?

Options:

- a. Aquaculture netting is used to keep the fish within a specific area and protect them from predators
- b. Aquaculture netting prevents all water exchange, so the water remains stable inside the cage
- c. The netting must be durable and resistant to wear from currents, weather, and the maintenance needs of the fish
- d. Aquaculture netting can have special coatings to prevent fouling and reduce maintenance needs

25. How can biosecurity measures be implemented in a facility?

Options:

- a. Implement strict disinfection protocols for equipment and personnel
- b. Allow free access to the facility to avoid restrictions in operations
- c. Monitor and control water quality to reduce the risk of disease outbreaks
- d. Isolate and treat sick individuals to prevent the spread of infection

26. What is a water circulation process, and what benefits does it provide?

Options:

- a. Water circulation helps evenly distribute oxygen in the water, which is important for fish health
- b. A water circulation process helps remove waste and maintain good water quality
- c. Water circulation is unnecessary, as water quality always regulates itself naturally
- d. Good water circulation reduces the risk of disease and ensures a stable temperature in the facility

27. What is the significance of light conditions, and how can they be controlled?

Options:

- a. Light conditions affect fish growth, behavior, and reproduction
- b. Artificial lighting can be used to regulate the fish's circadian rhythm and production cycle
- c. Light conditions have no impact on aquaculture and do not need to be controlled
- d. Adjusting light intensity and duration can help reduce stress and improve fish welfare

28. What is a temperature regulator, and how does it affect it?

Options:

- a. A temperature regulator helps maintain stable temperature conditions in aquaculture facilities
- b. Temperature regulation can optimize fish growth, metabolism, and immune function
- c. A temperature regulator is only used in cold-water aquaculture and has no effect on tropical species
- d. Temperature regulation can help reduce stress and disease in fish

- a. A sedimentation basin is used to remove solid particles and organic material from the water
- b. It helps improve water quality and reduce pollution
- c. Sedimentation basins accelerate water flow to prevent waste buildup
- d. By using a sedimentation basin, the load on other filtration systems can be reduced

30. What is an aeration technique, and how is it used?

Options:

- a. Aeration techniques are used to increase oxygen levels in the water and improve water quality
- b. Aeration helps remove harmful gases such as carbon dioxide and hydrogen sulfide
- c. Aeration is unnecessary in aquaculture facilities because water naturally contains enough oxygen
- d. Mechanical and natural aeration techniques can be used to ensure adequate oxygen supply





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