Myfuture CBC Revision

marine and fisheries technology -

Question Paper

1. What does 'polyculture' in aquaculture mean?

A. Farming several compatible species together

B. Farming only one species in a pond

C. Using only inorganic fertilizers

D. Moving fish between ponds daily

2. What is a 'fingerling' in aquaculture?

A. A mature fish ready for harvest

B. A disease that affects fish fins

C. A young fish that has developed from larvae and can be stocked

D. A device that measures water quality

3. Which production system uses continuous flow of fresh water through channels or tanks and is common for fast-growing species?

A. Raceway culture with flow-through water

B. Pond culture relying on stagnant water only

C. Recirculating aquaculture systems with zero flow

D. Floating cages attached to sea buoys

4. Which types of scales are typical of most modern bony fishes (teleosts)?

A. Placoid scales

B. No scales at all

C. Ganoid scales

D. Cycloid and ctenoid scales

5. What does 'stocking density' in a fish pond refer to?

A. Number of fish stocked per unit area or volume of the pond

B. Amount of lime applied per square metre

C. Weight of pond mud only

D. Number of birds seen near the pond

6. After the fry grow and are large enough to survive handling and transfer, what are they called?

A. Fingerlings

B. Broodstock

C. Zooplankton

D. Spawners

7. What is a simple community-based action that can improve sustainability of local capture fisheries?

A. Agreeing on local rules like closed seasons, gear restrictions, and protecting nursery areas

B. Removing signs that warn about protected areas

C. Stopping all fishing permanently without alternatives

D. Selling all fishing boats to foreign companies

8. What determines how much lime to apply to a pond?

A. Soil pH and pond size

B. Color of the fish scales

C. Distance to the nearest road

D. Number of birds nearby

9. Which temperature range is generally suitable for optimal growth of Nile tilapia?

A. Around freezing (0°C)

B. Above 40°C

C. Below 10°C

D. About 24–30°C

10. What is the function of inlet and outlet structures in a pond?

A. To add oxygen without equipment

B. To control water flow, filling and draining of the pond

C. To feed fish automatically

D. To provide shade for fish

11. When should you apply fertilizer to a pond to boost natural food before stocking fingerlings?

A. A few days to a week before stocking to allow plankton to develop

B. Only after harvesting the fish

C. Never; fertilizer should be applied during a storm

D. When the pond is completely dry

12. Which is the best source of water for a smallholder fish pond in Kenya?

A. Water directly from untreated sewage channels

B. Water collected from roadside puddles after heavy traffic

C. Stagnant water from open garbage pits

D. Clean and reliable sources such as borehole or spring water

13. What is the main advantage of using a hatchery in aquaculture?

A. It produces young fish (fry and fingerlings) in controlled numbers and quality

B. It removes the need for feed entirely

C. It makes wild fish stocks increase automatically

D. It guarantees zero disease forever

14. Why is monitoring catch and effort important in fisheries management?

A. It guarantees every fisher a fixed income

B. It helps detect changes in fish stocks so managers can set rules like limits or closures

C. It increases fish prices immediately

D. It reduces the number of boats without collecting data

15. What is the main role of broodstock in aquaculture?

A. To clean excess algae from pond walls

B. To be the main source of food for fingerlings

C. To produce eggs and fertilized fry for future culture

D. To aerate the pond naturally

16. Which of the following is a common sign that fish in a pond may be sick?

A. Sleeping at the pond bottom as normal behavior

B. More vivid colours and increased spawning

C. Loss of appetite, abnormal swimming and visible lesions

D. Faster growth and increased appetite

17. How often should farmers typically sample a representative group of fish to monitor growth in a grow-out pond?

A. Only once in the lifetime of the pond

B. Every hour all day

C. Every 10 years

D. Every 2–4 weeks

18. What is the primary purpose of aerators in fish ponds?

A. To add nutrients to the pond

B. To warm the water for tropical fish

C. To raise the water pH

D. To increase dissolved oxygen in the water

19. What is the primary function of a hatchery in an aquaculture production system?

A. To store harvested fish for long periods

B. To produce and supply quality fry and fingerlings for stocking

C. To process fish for market

D. To act as a recreational fishing pond

20. What does FCR (Feed Conversion Ratio) measure on a fish farm?

A. The amount of feed required to produce one unit of fish weight (feed given ÷ weight gain)

B. The number of fish harvested per hour

C. The oxygen level in mg/L

D. The pond water exchange rate per day

21. What is the primary role of the swim bladder in most bony (teleost) fish?

A. Detects electrical fields in the water

B. Controls buoyancy so the fish can maintain depth without constant swimming

C. Stores eggs before spawning

D. Filters food particles from the water

22. How do tilapia reproduce biologically (general reproductive mode)?

A. Oviparous — they lay eggs that develop outside the mother's body

B. Viviparous — they give birth to live young

C. Asexual reproduction by budding

D. Ovoviviparous — eggs hatch inside the mother and then are born

23. What is the role of fertilising a pond with animal manure or inorganic fertilizers?

A. To kill all microscopic life so fish can grow faster

B. To make water clearer for tourists

C. To permanently reduce pH below 4

D. To increase plankton and natural food for fish

24. What is carrying capacity in aquaculture?

A. The total weight of nets you can store

B. The maximum number of people allowed near a pond

C. The speed at which water flows through a channel

D. The maximum number of fish that the pond environment can support without harm

25. What is the role of the pyloric caeca found near the stomach of many fish?

A. Help the fish breathe air at the surface

B. Produce eggs before spawning

C. Store oxygen for deep dives

D. Increase digestion and nutrient absorption by secreting enzymes

26. Why is record keeping important on a fish farm?

A. It stops the fish from breeding

B. It is unnecessary and only for scientists

C. It helps monitor growth, feed use and profitability and supports good management

D. It increases fish disease incidence

27. What is a good feeding practice for tilapia in grow-out ponds for a smallholder farmer?

A. Never feed; rely on nothing

B. Feed 2–3 times per day with measured rations

C. Feed once a month a very large amount

D. Feed only at night without measurement

28. What is the main role of broodstock in aquaculture production systems?

A. To be harvested immediately for market size

B. To produce eggs and milt for hatcheries

C. To act as filter feeders to clean pond water

D. To be used as fertiliser in ponds

29. Which seaweed is commonly grown in Kenyan coastal areas for income and food?

A. Kelp (cold-water kelp species)

B. Eucheuma and Gracilaria species

C. Cabbage

D. Pineapple

30. When is it best to apply fertilizer to a pond to stimulate natural food production?

A. Only after harvesting the fish

B. Shortly after filling the pond and before stocking to allow plankton to develop

C. Only during drought to save water

D. Never apply fertilizer to a pond

31. Which seaweed culture method is commonly used along the Kenyan coast for species like Eucheuma or Kappaphycus?

A. Deep-sea cage culture anchored at 200 metres depth

B. Hatchery-based breeding in freshwater tanks

C. Dry-land greenhouse cultivation without seawater

D. Long-line or rope culture where seaweed is tied to ropes in shallow water

32. Why is dissolved oxygen important in aquaculture ponds?

A. It makes the water smell better

B. It checks the colour of fish scales

C. Fish and beneficial microbes need oxygen to live and grow

D. It reduces the need for feeding

33. Polyculture in aquaculture means:

A. Raising fish only in cages on the coast

B. Growing several compatible species together to use different pond niches

C. Alternating fish production with crop farming each year

D. Growing only one species in a system

34. How often should small juvenile tilapia typically be fed on a small Kenyan farm for good growth?

A. Never—juveniles find all food by themselves

B. Only when it rains

C. Twice a day to several times daily depending on age

D. Once a month

35. Which two fish species are most commonly farmed in Kenyan freshwater aquaculture?

A. Tuna and marlin

B. Pacific shrimp and lobster

C. Atlantic salmon and haddock

D. Nile tilapia and African catfish

36. Why do hatcheries and nurseries play an important role in Kenyan aquaculture?

A. They eliminate the need for any pond management after stocking

B. They are only used to store harvested fish before market

C. They rear fry to strong fingerlings that survive better when stocked into grow-out

D. They replace the need to feed fish during grow-out

37. Which organ is primarily responsible for excreting excess salts in marine bony fish?

A. Gills (through specialised chloride cells)

B. Swim bladder

C. Liver

D. Spleen

38. What is pond fertilization used for in traditional aquaculture?

A. To stimulate natural plankton growth that fish feed on

B. To bleach the pond bottom

C. To directly feed the fish by adding bread

D. To make water salty

39. Which practice helps prevent the spread of disease when introducing new fish to a farm?

A. Feeding wild-caught feed to scare off pathogens

B. Introducing many fish at once without checks

C. Removing all water from the new fish's transport bag before release

D. Quarantining and observing new fish before mixing them with the farm stock

40. Which water parameter is most critical because fish need oxygen dissolved in water to breathe?

A. pH

B. Ammonia concentration

C. Turbidity

D. Dissolved oxygen

41. Which of the following best describes a traditional extensive pond culture system used by small-scale fish farmers in Kenya?

A. Marine cage units placed in deep ocean waters with daily water exchange

B. Intensive indoor tanks with full water recycling and mechanical filtration

C. Low stocking density with little or no added feed and reliance on natural pond productivity

D. High stocking density with continuous aeration and formulated feeds

42. Which practice helps make aquaculture environmentally sustainable?

A. Removing all vegetation around water bodies

B. Using good feed management, proper stocking, and treating effluents
C. Feeding fish with plastics

D. Dumping untreated pond water into rivers

43. Which of the following commonly preys on pond fish in Kenya?

A. Concrete dikes

B. Domestic cats only

C. Birds such as herons and kingfishers

D. Cactus plants

44. Which term describes newly hatched fish that still feed on yolk or tiny plankton?

A. Fingerlings

B. Juveniles

C. Fry

D. Broodstock

45. Which muscle type in fish is used mainly for sustained, slow swimming?

A. Cardiac muscle (used for digestion)

B. Red muscle (slow-twitch, rich in blood and mitochondria)

C. White muscle (fast-twitch, for bursts of speed)

D. Smooth muscle (found in skin)

46. What is a main advantage of cage culture on Lake Victoria for Kenyan farmers?

A. Uses natural lake water which reduces need for pond construction
B. Completely eliminates disease risk from wild fish

C. Requires very large land areas next to the lake

D. Does not need any feeding or management

47. What is the main function of the operculum (gill cover) in bony fish like tilapia?

A. Stores extra oxygen for deep dives

B. Protects the gills and helps pump water across them for respiration
C. Controls the fish's buoyancy

D. Is used to grind food before digestion

48. Which organ in fish stores energy as fat and produces bile that helps digest fats?

A. Liver

B. Lateral line

C. Swim bladder

D. Gill filament

49. What does FCR (feed conversion ratio) measure on a fish farm?

A. Number of farmers at the pond

B. Depth of the pond in centimetres

C. Amount of feed required to produce one unit of fish weight (feed given ÷ weight gain)
D. Number of fish caught per net

50. What is the main purpose of fertilising earthen fish ponds before stocking in Kenyan systems?

A. To permanently harden pond soil for better drainage

B. To immediately kill unwanted predators

C. To encourage plankton growth as natural food for fry and fingerlings
D. To add oxygen directly to pond water