Myfuture CBC Revision

marine and fisheries technology -

Question Paper

1. What is integrated aquaculture (integrated farming)?

A. Using no water and only artificial feed

B. Farming only one expensive species in isolation

C. Combining fish farming with crop or livestock production to reuse resources
D. Building fish ponds in a forest without sunlight

2. How does climate change potentially affect capture fisheries in Kenya?

A. By increasing the number of fishermen automatically

B. By causing fish to only live in cages

C. By making fish invisible to fishing gear

D. By changing water temperatures and rainfall patterns, which can alter fish distribution and

3. Why is mesh size important in fishing nets?

A. It determines the net color which attracts fish

B. It increases the amount of bycatch

C. It allows small, juvenile fish to escape, helping protect future stocks
D. It makes nets lighter so boats can move faster

4. Why are spawning aggregations important to fisheries managers?

A. Because they require fishermen to use more nets

B. Because they indicate where to build fish markets

C. Because they happen only in deep ocean and never affect coastal fisheries
D. Because large groups gather to spawn and protecting these events can prevent large

5. What is meant by stocking density in an aquaculture production system?

A. The amount of feed given per day

B. The number or biomass of fish placed per unit area or volume
C. The oxygen concentration in the water

D. The pH level of pond water

6. Which biosecurity practice helps prevent introduction of diseases into a pond?

A. Mixing fish from many ponds immediately

B. Quarantine new fish before introducing them to the pond

C. Adding random soil from other farms into the pond

D. Feeding wild-caught fish to the stock without checks

7. What does carrying capacity refer to in an aquaculture pond or cage system?

A. The legal number of customers allowed to visit the farm per week
B. The maximum depth of the pond measured in metres

C. The maximum biomass of fish the system can support without unacceptable water quality or
D. The total weight of nets and gear stored at the farm

8. What is the primary benefit of a recirculating aquaculture system (RAS)?

A. It depends entirely on natural plankton production

B. It requires unlimited fresh water from rivers

C. It reuses and treats water, allowing tight control of water quality
D. It is always cheaper to build than ponds or cages

9. Which factor does NOT directly affect fish abundance in a lake or coastal area?

A. The color of the flags on fishing boats

B. Habitat quality such as mangroves and reefs

C. Water quality and availability of food

D. Fishing pressure (how much people fish)

10. What is the main reason farmers fertilize fish ponds?

A. To change fish species

B. To disinfect the water from bacteria

C. To make fish lay eggs every day

D. To increase natural food (plankton) production

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

A. Placoid scales

B. Cycloid and ctenoid scales

C. No scales at all

D. Ganoid scales

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

A. Filters food particles from the water

B. Detects electrical fields in the water

C. Stores eggs before spawning

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

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

A. Never apply fertilizer to a pond

B. Only after harvesting the fish

C. Only during drought to save water

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

14. What is a common low-cost feed ingredient used by smallholder fish farmers in Kenya?

A. Gold flakes

B. Pure sand

C. Local ingredients such as maize bran, sunflower cake, or cottonseed cake
D. Imported fishmeal only

15. Which of the following is a sign of overfishing in a Kenyan lake or coastal fishery?

A. Smaller average fish sizes and declining catches over time

B. An increase in the number of fish markets

C. Boats becoming newer and faster

D. More tourists visiting the beaches

16. Which water quality parameter measures how acidic or alkaline pond water is?

A. Salinity only

B. Dissolved oxygen

C. Turbidity

D. pH

17. What is a commonly recommended pond depth for temperate/tropical fish production in Kenya?

A. 0.2 to 0.5 metres

B. 5 to 7 metres

C. 10 to 15 metres

D. About 1.5 to 2.5 metres

18. What is the purpose of a nursery or hapa in aquaculture?

A. To keep adult fish for show only

B. To grow crops like maize inside water

C. To raise fry into fingerlings before transferring to grow-out ponds
D. To store harvested fish for months without ice

19. Which of the following is a basic sign that fish may be stressed or sick?

A. Bright colours and fast growth

B. Normal swimming and feeding actively

C. Rapid gasping at the surface and loss of appetite

D. Jumping happily without reason

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

A. Stagnant water from open garbage pits

B. Clean and reliable sources such as borehole or spring water
C. Water directly from untreated sewage channels

D. Water collected from roadside puddles after heavy traffic

21. What does 'carrying capacity' of a pond mean for a fish farmer?

A. The amount of rain the pond can hold

B. The weight of the farmer who can sit by the pond

C. Maximum number or biomass of fish the pond can support without problems
D. The daily feed weight supplied by the farmer

22. What is 'bycatch' in capture fisheries?

A. The practice of releasing juvenile fish immediately

B. Fish sold at low price at the market

C. Non-target species caught unintentionally while fishing

D. Extra fish caught and kept for research only

23. What is a primary reason fish migrate?

A. To increase the number of landing sites

B. To avoid getting sunburned

C. To find food and suitable places to spawn

D. To learn to use fishing gear

24. What is the main purpose of the dorsal fin on most fishes?

A. Is the primary organ for breathing

B. Stores eggs during spawning

C. Provides stability and prevents rolling

D. Produces sound for communication

25. Which practice helps reduce bycatch in small-scale gillnet operations?

A. Leaving nets unattended for weeks

B. Making nets as small-meshed as possible everywhere

C. Using dynamite to scare fish into nets

D. Using appropriate mesh size and setting nets in the correct depth and time

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

A. To produce eggs and milt for hatcheries

B. To be used as fertiliser in ponds

C. To be harvested immediately for market size

D. To act as filter feeders to clean pond water

27. What is the key difference between monoculture and polyculture systems?

A. Monoculture does not require feeding at all

B. Monoculture uses only saltwater while polyculture uses freshwater

C. Monoculture raises a single species; polyculture raises multiple species together

D. Polyculture always gives lower total yields than monoculture

28. Which culture system keeps fish in net enclosures within a lake or reservoir?

A. Recirculating aquarium system (RAS)

B. Pondless soil farming

C. Hydroponic vegetable farming

D. Cage culture

29. Which species is commonly used for on-farm cage culture on Lake Victoria in Kenya?

A. Barramundi native to Australia

B. Pacific bluefin tuna

C. Atlantic salmon

D. Nile tilapia (Oreochromis niloticus)

30. Which of the following is an environmental concern specifically associated with intensive cage culture in large lakes?

A. No interaction with wild fish populations

B. Continuous improvement of water clarity due to cages

C. Guaranteed elimination of invasive species

D. Accumulation of uneaten feed and fish wastes beneath cages causing benthic impacts

31. Which of the following is a basic step in preparing an earthen pond before stocking fish?

A. Planting maize in the pond bottom

B. Immediately adding fingerlings to muddy water

C. Pouring diesel into the pond to kill insects

D. Draining, drying, removing predators, and liming if necessary

32. Which fishing gear is most likely to damage the seabed and catch many non-target organisms?

A. Fish traps placed in mangroves

B. Handlines

C. Bottom trawl nets

D. Small gillnets set near the surface

33. Which action best illustrates biosecurity on a Kenyan fish farm?

A. Sharing nets and tools among neighbouring farms without cleaning

B. Quarantining new fish, disinfecting equipment, and controlling visitors

C. Buying broodstock from many unknown sources without quarantine

D. Dumping untreated pond water into nearby streams

34. What is the main difference between artisanal and industrial fisheries?

A. Artisanal fisheries catch only small fish and industrial only large fish

B. Artisanal fisheries only fish in freshwater and industrial only in saltwater

C. Artisanal fisheries use small boats and gear and support local communities; industrial

D. Artisanal fisheries always use illegal gear while industrial are legal

35. 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. Is used to grind food before digestion

D. Controls the fish's buoyancy

36. 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 guarantees zero disease forever

D. It makes wild fish stocks increase automatically

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

A. Tuna and marlin

B. Nile tilapia and African catfish

C. Atlantic salmon and haddock

D. Pacific shrimp and lobster

38. Why are broodstock important in aquaculture?

A. They measure water temperature

B. They are mature fish kept for breeding to produce eggs and sperm

C. They are fish used only for consuming excess feed

D. They are the predators used to control pests

39. Which fish has a heterocercal tail where the upper lobe is larger than the lower (common in sharks)?

A. Mackerel

B. Tilapia

C. Shark

D. Perch

40. What is the main purpose of aeration in ponds?

A. To add salt to the water

B. To increase dissolved oxygen and mix water

C. To feed the fish automatically

D. To cool the pond to ice

41. 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. Never; fertilizer should be applied during a storm

C. When the pond is completely dry

D. Only after harvesting the fish

42. What does polyculture in fish farming mean?

A. Culturing more than one compatible fish species in the same pond
B. Rotating pond drying every day

C. Growing fish only in a single tank indoors

D. Keeping one fish in many separate ponds

43. Which fish species is the most commonly cultured in Kenya and well suited for pond farming?

A. Pacific tuna

B. Greenland halibut

C. Atlantic salmon

D. Nile tilapia (Oreochromis niloticus)

44. Which sign most likely indicates disease in pond fish?

A. Increased jumping and healthy feeding

B. Rapid growth with regular feeding

C. Normal schooling and bright colours

D. Loss of appetite and abnormal swimming behavior

45. Polyculture in aquaculture means:

A. Growing only one species in a system

B. Raising fish only in cages on the coast

C. Growing several compatible species together to use different pond niches
D. Alternating fish production with crop farming each year

46. What material makes up the skeleton of most teleost (bony) fish?

A. Bone (ossified tissue)

B. Keratin

C. Chitin

D. Pure cartilage only

47. When is the best time to harvest fish from a grow-out pond?

A. Randomly whenever the farmer has time

B. Only during the coolest night hours

C. When fish reach the target marketable size

D. Only during the heavy rains

48. What is the function of photophores found on some deep-sea fish?

A. Store oxygen for long dives

B. Produce light (bioluminescence) for camouflage, attracting prey or communication
C. Make the fish taste bitter to predators

D. Filter out salt from seawater

49. Which landing site activity helps protect fish quality immediately after capture?

A. Rapidly cooling fish with ice or clean seawater and sorting properly
B. Leaving fish on the hot sand all day

C. Throwing fish into a single dirty container

D. Stacking fish uncleaned next to fuel drums

50. Why is mesh size regulation important in capture fisheries?

A. To change the color of nets for decoration

B. To make nets heavier and harder to use

C. To reduce the number of boats on the water

D. To allow juvenile or undersized fish to escape and grow to maturity