Myfuture CBC Revision

marine and fisheries technology -

Question Paper

1. Which type of scales are found on sharks?

A. Placoid scales

B. Ctenoid scales

C. Cycloid scales

D. Ganoid scales

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. What is an important reason for establishing marine protected areas (MPAs) like Kisite-Mpunguti near the Kenyan coast?

A. To stop all fishing permanently and prevent any use of the sea by people

B. To replace local fishing effort with imported fish

C. To allow larger boats to anchor and increase tourism only

D. To protect breeding and nursery habitats so fish stocks can recover and support fisheries

4. What does the lateral line system in fish detect?

A. The chemical composition of the water for taste

B. Water movements and vibrations around the fish

C. Electric fields produced by other animals

D. Changes in water temperature only

5. How do scientists commonly estimate the age of a fish?

A. By counting rings on otoliths (ear bones) or scales

B. By only measuring the water temperature

C. By noting the colour of the fish's fins

D. By asking the fish how old it is

6. What are pharyngeal teeth used for in species like Nile tilapia?

A. Crushing and grinding plant material and algae

B. Filtering oxygen from water

C. Attracting mates with bright colors

D. Producing sound during spawning

7. What is the main purpose of applying agricultural lime to a fish pond?

A. To directly kill fish parasites

B. To lower pH so algae will not grow

C. To raise pH and increase alkalinity and calcium for plankton production

D. To add nitrogen as a fertilizer

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

A. Number of birds nearby

B. Distance to the nearest road

C. Soil pH and pond size

D. Color of the fish scales

9. How does stocking density affect growth in aquaculture?

A. Lower density kills all fish

B. Very high density can reduce growth and increase disease due to stress and poor water

C. Higher density always increases growth per fish

D. Density has no effect on fish

10. Which fin is mainly responsible for a fish’s forward propulsion?

A. Anal fin

B. Dorsal fin

C. Caudal (tail) fin

D. Pectoral fin

11. Which trophic level would a herbivorous tilapia mostly occupy?

A. Primary consumer (second trophic level)

B. Top predator level

C. Primary producer level

D. Detritivore level only

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

A. Immediately adding fingerlings to muddy water

B. Planting maize in the pond bottom

C. Pouring diesel into the pond to kill insects

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

13. Why is dissolved oxygen (DO) important for fish in lakes and oceans?

A. It makes the water clearer

B. It prevents sunlight from reaching plants

C. Fish need dissolved oxygen to breathe; low DO can cause stress or death

D. It causes water to smell fresh

14. Why is record keeping of catches important in capture fisheries?

A. It provides data needed to assess stocks and set sustainable rules

B. It makes fish taste better

C. It reduces the weight of fish on boats

D. It increases the speed of fish growth

15. Why is a dike built around a pond?

A. To increase mosquito breeding only

B. To keep sunlight away from the water

C. To feed the fish automatically

D. To retain water in the pond and provide access/working space

16. Which soil type is generally best for constructing earthen fish ponds in Kenya?

A. Loamy soil that always causes ponds to dry rapidly

B. Sandy soil that allows rapid seepage

C. Clayey soil that holds water and reduces seepage

D. Gravelly soil with large rocks for drainage

17. What is a desirable dissolved oxygen level for healthy tilapia production?

A. Below 1 mg/L

B. Exactly 10 mg/L only

C. Around 0.5 mg/L

D. Above 5 mg/L

18. What is the main benefit of using aerators in fish ponds?

A. To permanently heat the water to 40°C

B. To increase dissolved oxygen and prevent low oxygen stress

C. To attract mosquitoes to the pond

D. To add salt to the pond water

19. What is polyculture in aquaculture?

A. Raising different compatible aquatic species together

B. Keeping fish in complete darkness for faster growth

C. Growing a single species in a pond

D. Using only artificial feeds in ponds

20. Which water parameter is commonly measured in parts per thousand (ppt) in marine environments?

A. Dissolved oxygen

B. Water turbidity

C. Salinity

D. Water temperature

21. A fish with an inferior mouth (mouth opening on the underside) is most likely adapted to what feeding habit?

A. Catching fast prey in open water

B. Feeding on or near the bottom (benthic feeding)

C. Feeding at the water surface only

D. Filter feeding plankton while swimming

22. Which method helps reduce post-capture spoilage of fish on landing sites in Kenya?

A. Transporting fish without covering them

B. Leaving fish in the sun without protection

C. Using ice, smoking or salting immediately after capture

D. Mixing fish with soil at the landing site

23. Which of these is a common freshwater aquaculture species in Kenya?

A. Oysters

B. Nile tilapia

C. Atlantic salmon

D. Bluefin tuna

24. Why is the flat body shape of bottom-dwelling fish such as flounder an advantage?

A. It makes them better at jumping out of the water

B. It helps them swim faster in open water

C. It helps them breathe air at the surface

D. It allows them to lie flat on the seabed for camouflage and ambush

25. How does overfishing most directly reduce fish populations?

A. By improving water quality and habitat

B. By causing more plant growth in lakes

C. By increasing the genetic diversity of fish

D. By removing too many adult breeding fish from the population

26. Which life stage is most important to protect if the goal is to ensure future fish recruitment?

A. The fishers who catch the fish

B. Old, very large fish only

C. Fish processed and sold at market

D. Juvenile and spawning-stage fish

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

A. Below 10°C

B. About 24–30°C

C. Above 40°C

D. Around freezing (0°C)

28. Why is dissolved oxygen important in aquaculture ponds?

A. It checks the colour of fish scales

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

C. It reduces the need for feeding

D. It makes the water smell better

29. What is a 'fish stock' in fisheries science?

A. A population of fish of the same species in a particular area

B. A group of fishing boats operating together

C. A piece of storage equipment for fish

D. A single fish held in an aquarium

30. Which of the following is a direct sign of overfishing in a lake or marine area?

A. An increase in mangrove cover

B. Consistent decline in average catch and smaller fish sizes

C. Complete absence of fishing boats

D. More fishers reporting larger and larger catches each year

31. What is the primary function of the operculum in bony fish?

A. To store excess food

B. To act as the main organ for hearing

C. To cover and protect the gills and help pump water over them

D. To help the fish reproduce by holding eggs

32. Which fish is native and important in Kenya's Lake Victoria fisheries?

A. Atlantic salmon

B. Rainbow trout

C. Nile tilapia (Oreochromis niloticus)

D. Pacific mackerel

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

A. To increase plankton and natural food for fish

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

C. To make water clearer for tourists

D. To permanently reduce pH below 4

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

A. Pacific shrimp and lobster

B. Atlantic salmon and haddock

C. Tuna and marlin

D. Nile tilapia and African catfish

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

A. Habitat quality such as mangroves and reefs

B. The color of the flags on fishing boats

C. Water quality and availability of food

D. Fishing pressure (how much people fish)

36. When is the best time to harvest pond fish?

A. Only during heavy rainstorms

B. When fish reach marketable size and condition

C. When the pond water is completely frozen

D. Immediately after stocking fry

37. Which structure connects the mouth to the stomach in fish?

A. Intestine

B. Swim bladder

C. Gill slit

D. Oesophagus

38. Which of these is an example of a natural food in fertilised ponds?

A. Phytoplankton and zooplankton

B. Plastic sheets

C. Processed pellet feed only

D. Concrete blocks

39. Which fishing method is considered more selective and helps reduce bycatch?

A. Blast (dynamite) fishing

B. Fish traps with escape gaps

C. Very fine mesh gillnets

D. Large indiscriminate bottom trawls

40. Which measurement is commonly used to indicate water clarity in lakes and coastal waters?

A. Secchi depth (how far a black-and-white disk is visible)

B. Number of fishermen per km

C. Fish length in centimetres

D. pH value measured in degrees

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

A. Water collected from roadside puddles after heavy traffic

B. Stagnant water from open garbage pits

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

D. Water directly from untreated sewage channels

42. What does 'anadromous' mean in fish migration terms?

A. Fish that migrate from freshwater to sea to spawn

B. Fish that only live in ponds

C. Fish that do not migrate at all

D. Fish that migrate from sea to freshwater to spawn

43. Which feed component is most important for fish growth?

A. Sand

B. Salt

C. Wood chips

D. Protein

44. Which organ is primarily responsible for removing nitrogenous waste (like ammonia) from a fish's body?

A. Heart

B. Caudal fin

C. Kidney

D. Liver

45. What is carrying capacity of a pond?

A. Amount of lime that can fit in a bucket

B. Number of birds the pond can hold

C. Maximum fish biomass the pond ecosystem can support without harm

D. The length of the pond dike in metres

46. Which radio procedure is correct when making a distress call from a VHF radio in Kenyan waters?

A. Send a text message and hope someone replies

B. Call 'Mayday' on channel 16, give position, nature of distress, and number of people

C. Only use the radio if you see another boat nearby

D. Switch to any channel and whisper details quietly

47. What does 'countershading' mean in fish coloration?

A. Bright colors on both sides for mating displays

B. Vertical stripes to confuse predators

C. Uniform color all over the body

D. Darker on the dorsal (top) side and lighter on the belly

48. What is 'bycatch' in fishing?

A. Non-target species or sizes unintentionally caught during fishing

B. Fish caught intentionally for sale

C. Fish caught with hand lines only

D. Only juvenile fish kept by law

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

A. Store oxygen for long dives

B. Filter out salt from seawater

C. Produce light (bioluminescence) for camouflage, attracting prey or communication

D. Make the fish taste bitter to predators

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

A. Pacific bluefin tuna

B. Nile tilapia (Oreochromis niloticus)

C. Atlantic salmon

D. Barramundi native to Australia