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இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka

82 | E | I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2021(2022)
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2021(2022)
General Certificate of Education (Ord. Level) Examination, 2021(2022)

ජලජ ජීව සම්පත් තාක්ෂණවේදය	I, II
நீருயிரினவளத் தொழினுட்பவியல்	I, II
Aquatic Bioresources Technology	I, II

පැය තුනයි
மூன்று மணித்தியாலம்
Three hours

අමතර කියවීම් කාලය - මිනිත්තු 10 යි
மேலதிக வாசிப்பு நேரம் - 10 நிமிடங்கள்
Additional Reading Time - 10 minutes

Use additional reading time to go through the question paper, select the questions you will answer and decide which of them you will prioritise.

Aquatic Bioresources Technology I

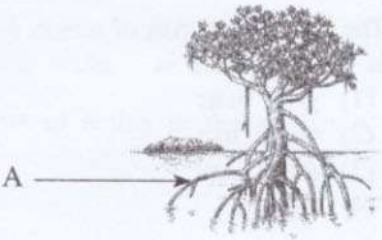
Note :

* *Answer **all** questions.*
* *In each of the questions from **1** to **40**, pick one of the alternatives (1), (2), (3), (4), which is **correct or most appropriate**.*
* ***Mark a cross (×) on the number corresponding to your choice in the answer sheet provided.***
* *Further instructions are given on the back of the answer sheet. Follow them carefully.*

1. The province of Sri Lanka which has the highest number of lagoons is
(1) Northern. (2) Western. (3) Southern. (4) North-Western.

2. A few statements on sea grass are given below.
A – Grow submerged in shallow sea.
B – They are monocotyledon flowering plants.
C – Grow well on rocks raised up from the sea.
The true statements of the above are,
(1) A and B only. (2) A and C only. (3) B and C only. (4) all A, B and C.

3. Part A of the plant shown in the picture is important most,
(1) as firewood.
(2) to prepare tasty drinks.
(3) in coast conservation.
(4) to control low and high tide.



4. Biodiversity rich Bonavista reef is a
(1) coral reef. (2) rocky reef. (3) sand reef. (4) sand stone reef.

5. A pelagic cartilaginous fish is
(1) seer fish. (2) skate. (3) sailfish. (4) marlin.

6. The highest contributing tropic level in existence of the life in the food chain is
(1) phyto plankton. (2) zoo plankton. (3) small fish. (4) large fish.

7. Which of these is more important in controlling salinity of mangrove ecosystem?
(1) Currents (2) Tide (3) Upwelling (4) Floods

8. The main process in declining primary productivity of reservoirs in the mountain regions is
(1) cyclone.
(2) increase of water temperature.
(3) soil erosion.
(4) upwelling.

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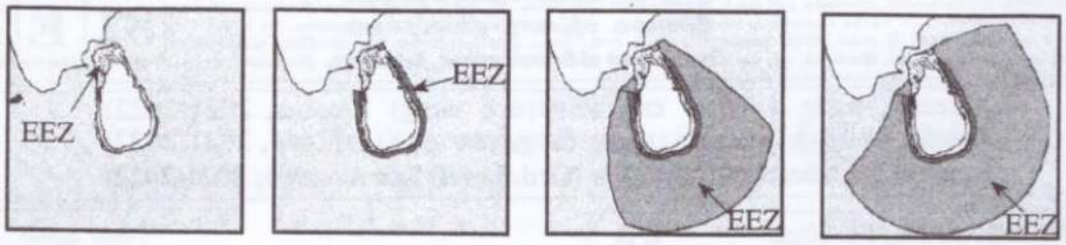
9. Select the picture that correctly shows the Exclusive Economic Zone (EEZ) of Sri Lanka.



(1) (2) (3) (4)

10. A student examined a fish that was brought home and said that the fish is surface living one. To get this conclusion, characteristic feature of the fish influenced the most is
(1) gill rackers. (2) mouth. (3) eyes. (4) lateral line.

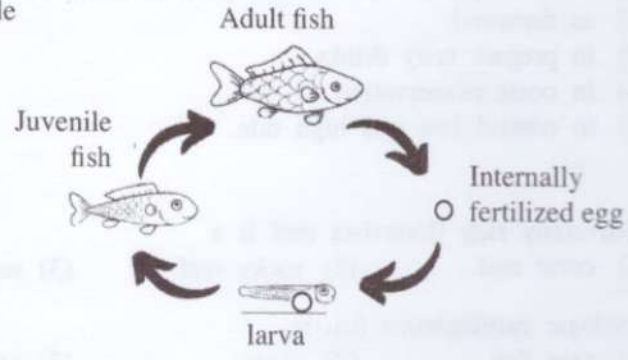
11. Which fish can stay live for the longest time duration when it is out of water?
(1) Anchovy (2) Herring (3) Skipjack tuna (4) Climbing perch

12. What is the ecosystem that butterfly fish and clown fish are living?
(1) Mangrove (2) Coral reef (3) Riverine (4) Inland reservoir

13. It has been observed that all fish in a reservoir have died at once and the colour of the water has not been changed. The main reason for their death would be
(1) eutrophication due to entering of organic fertilizer.
(2) entered toxic chemical.
(3) increased water turbidity.
(4) declined of dissolved oxygen (O_2) in the water due to reduction of plant community.

14. Names of some hormones are given below from A to D.
A - Prostaglandins (PG)
B - Growth hormone (GnRH)
C - Oxytocin (OXT)
D - Luteinsing hormone (LHRH)
Out of the above hormones which are used in artificial reproduction of fresh water fish are,
(1) A, B and C only. (2) A, B and D only.
(3) B, C and D only. (4) All A, B, C and D.

15. The ornamental fish of which the life cycle is depicted here is
(1) gold fish.
(2) angle fish.
(3) sword tail.
(4) fighter.



16. Which ornamental fish species that can be cultured easily with low investment?
(1) Black Ruby (Bulath hapaya) (2) Gold fish
(3) Discus (4) Platy

17. A black substance like soot has been seen in a seafood species that was brought home. This animal species is
(1) sea urchin. (2) squid. (3) shrimp. (4) sea crab.

[see page three

18. Which is the edible aquatic plant shown in the picture?

(1) Water lily
(2) Lasia
(3) Bacopa
(4) Aponogenton

19. An aquatic organism found only in seawater is
(1) crab. (2) mussel. (3) prawn. (4) sole.

20. An aquatic plant propagated by flower stalk is
(1) Amazon sword. (2) Lotus.
(3) Arrowhead. (4) Water snowflake.

21. What is used as a plant protein source in preparation of fish meal?
(1) Wheat flour (2) Rice bran (3) Sea weeds (4) Soyabean meal

22. Feed with high protein content is required for,
(1) small larval fish and fry. (2) the fish of growing life stage.
(3) the fish of harvesting stage. (4) the fish of poor health.

23. An information that can be captured from the Global Positioning System (GPS) of multi-day boats is
(1) depth of the water. (2) location of fish schools.
(3) location of the vessel. (4) meteorological conditions.

24. The most negatively impacting fishing method on the sustainability of fish resources is
(1) long line. (2) hand line. (3) troll line. (4) gillnet.

25. What is the largest craft among the traditional fishing crafts?
(1) Outrigger canoe (2) Beach seine plank built canoe
(3) Dug-out canoe (Vallum) (4) Log craft (Teppam)

26. What is the method of catching fish by attracting them with live baits?
(1) Beach seine (2) Troll line
(3) Longline (4) Pole and line

27. The wave signal which is used by the fish finder to detect the fish is
(1) sound wave. (2) heat wave.
(3) magnetic wave. (4) electromagnetic wave.

28. A characteristic feature that can be used to identify the freshness of a fish in the market is
(1) dark red eyes.
(2) flesh of the fish will not bounce back when it is pressed.
(3) flesh of the fish will bounce back when it is pressed.
(4) pink coloured gills.

29. Which fish species is mainly used in preparation of Jaadi?
(1) Sardin (2) Anchovy (3) Skipjack tuna (4) Tilapia

30. Histamine in tuna fish will start producing due to,
(1) bacterial activity. (2) enzymatic activity.
(3) exposure to air. (4) mixing with chemical substance.

31. The reason of resulting rancid smell and dull colour of fish yield is,
(1) decomposing of fish flesh by microorganisms.
(2) oxidation of fat in flesh.
(3) activity of antioxidant in flesh.
(4) decline of pH in flesh when exposed to air.

[see page four

32. A several steps that have been used by a trader to preserve fish yield by the addition of ice are given below.

A - Remove gills and gut, wash with clean water and storage in ice
B - Completely cover the fish with large ice cubes
C - Thoroughly clean the fish storage boxes and racks

The most appropriate activity of them are,

(1) A and B only. (2) A and C only. (3) B and C only. (4) All A, B and C.

33. What is the most suitable material in storing fish on board of the fishing vessel?

(1) Flake ice (2) Block ice (3) Chilled fresh water (4) Chilled sea water

34. A few fish varieties are given below from A to D.

A - Snakehead
B - Tilapia
C - Yellowfin tuna
D - Indian Mackerel

The fishes which have high fat content are,

(1) A and B. (2) A and C. (3) B and C. (4) C and D.

35. The fishery that has no open access and only limited to privileged fishermen is

(1) gillnet fishery in coastal sea. (2) beach seine fishery in coastal sea.
(3) gillnet fishery in deep sea. (4) longline fishery in deep sea.

36. A fungus infected disease of fish is

(1) fin rot.
(2) mouth rot.
(3) dropsy.
(4) bent or curved spine (fish tuberculosis).

37. An application of state rules and regulations in fisheries management is called 'enforcement management'. Such management could be seen in,

(1) management of Rekawa lagoon.
(2) management of stake net fishery in the Negambo lagoon.
(3) management of Hikkaduwa coral reef.
(4) management of inland fisheries in Girithale tank.

38. Which is the organization established by the stakeholders to ensure sustainable management of the Refelagic fishery resource?

(1) European Commission
(2) Indian Ocean Tuna Commission
(3) Bay of Bengal Programme
(4) Asia-Pacific Fishery Commission

39. The highest contribution in development of the fisheries industry by private sector is

(1) providing fisheries harbour facilities.
(2) conducting research on fishery resources.
(3) distribution of fry and fingerlings from hatcheries.
(4) take part in fish marketing activities.

40. The state own boat-yards are managed by,

(1) National Aquatic Resource Research and Development Agency (NARA).
(2) Ceylon Fisheries Corporation (CFC).
(3) National Aquacultural Development Authority (NAQDA).
(4) Cey-Nor Foundation.

* *

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82 E I, II

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நீருயிரினவளத் தொழினுட்பவியல்	I, II
Aquatic Bioresources Technology	I, II

Aquatic Bioresources Technology II

* *Answer* ***five*** *questions* ***only****, selecting the* ***first*** *question and* ***four*** *others.*

1. (A) Some activities associated with fisheries are shown in the picture.

(i) State a water source related to the activities shown in the picture.

(ii) (a) Mention a fishing gear shown in the picture.

(b) Name the fishing craft shown in the picture.

(iii) State **two** measures that can be applied on conservation of this water source.

(iv) In accordance to the picture, state **two** occasions where the post-harvest loss of fish are taken place.

(v) State **two** uses that can be obtained from spoilt fish which are not suitable for consumption.

(vi) State **four** activities that the state can workout for further development of this place.

(B) A youth from Nuwara Eliya has decided to try out in making dried fish using freshwater fish.

(i) Show the dried fish preparation process in a flow chart.

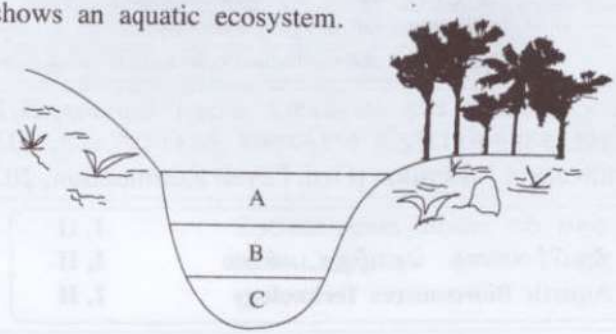
(ii) If he takes 15 kg of fish, what amount of dried fish he could produce roughly in kilograms?

(iii) State a method with the climate of the region he could use in drying fish.

(iv) State **two** features that could be used to identify quality dried fish.

[see page six

2. The following picture shows an aquatic ecosystem.



(i) (a) Name the water layers A, B and C.

(b) What is the body shape of the fish lives in the layer A?

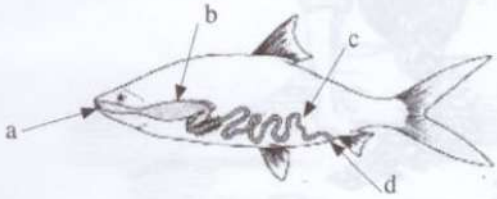
(ii) (a) State **two** problems prevailing in the aquatic ecosystem shown in the picture.

(b) State **two** steps that can be taken to increase the productivity of this aquatic ecosystem.

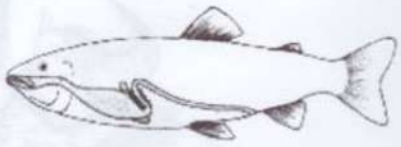
(iii) (a) Beside fish, state **four** other organisms that can be seen in this type of an aquatic ecosystem.

(b) Describe the importance of this aquatic ecosystem.

3. Two fish species A and B were dissected by a student. Their digestive systems were seen as shown in the picture.



fish A



fish B

(i) Name the parts a, b, c and d of fish A.

(ii) (a) Give a reason why is the digestive system of fish A is longer in comparison to fish B.

(b) Draw and name a food chain with three links containing fish B.

(iii) (a) State **two** food varieties that can feed with fish B.

(b) State **two** problems that would arise when growing fish B.

4. The coral reef ecosystem near the shore of Sri Lanka plays a role economically, ecologically as well as socially.

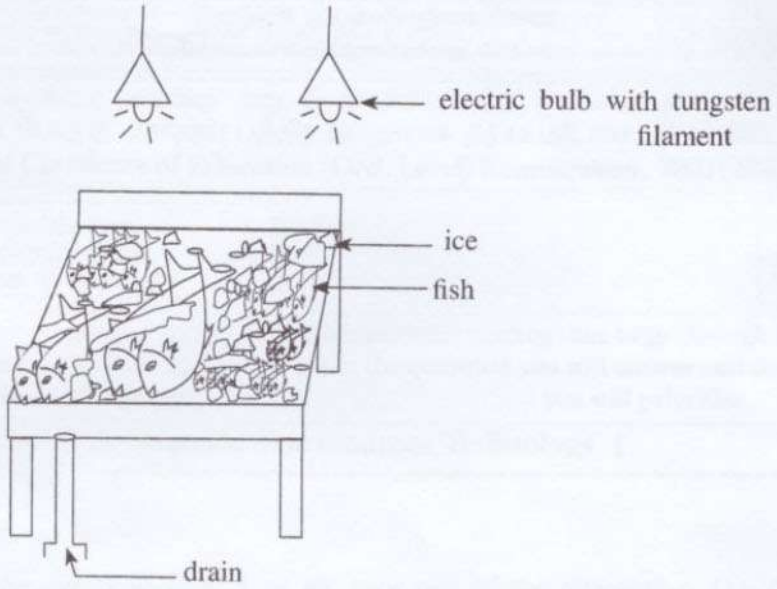
(i) Name **three** areas where famous coral reefs are situated in Sri Lanka.

(ii) State **three** benefits in protecting a coral reef.

(iii) (a) State **two** natural threats on survival of coral reefs.

(b) Describe **two** measures that can be applied to protect the coral reef ecosystem.

5. The picture shows how fish are displayed in a fish stall.



(i) State **two** measures that have been taken to maintain the quality of fish displayed here.

(ii) (a) State **two wrong** measures that the fish stall owner here has applied.

(b) Describe how the damage that brought by those wrong measures on the quality of fish displayed.

(c) State one action each that can be taken to rectify the two wrong measures mentioned in (ii) (a).

(iii) Describe benefits to the customer in maintaining the quality of fish in the market.

6. A youth who lives close to a lagoon has decided to start aqua farming as a self-employment.

(i) (a) State **four** aquatic species that he can select for farming.

(b) State **two** aquaculture structures that could be employed in farming those aquatic species.

(c) State **two** methods of getting seeds for farming.

(ii) (a) State **two** aquaculture practices that are used in aquaculture farming in Sri Lanka.

(b) Describe **two** measures that can be taken to maximize the profit of aqua farming.

(iii) (a) State **two** ways of damaging the lagoon ecosystem due to aqua farming.

(b) State **two** measures that can be taken in conservation of the lagoon ecosystem.

7. The people's interest in farming aquatic food plants has increased recently.

(i) State the importance of farming aquatic food plants.

(ii) Name **two** farming methods of aquatic food plants and describe one of them.

(iii) Describe the potential of expanding the farming of aquatic food plants in Sri Lanka.