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இலங்கைப் பரீட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம் இலங்கைப் பரීட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka Department of Examinations, Sri Lanka
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82 E I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2023(2024)
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2023(2024)
General Certificate of Education (Ord. Level) Examination, 2023(2024)

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

පැය තුනයි
 மூன்று மணித்தியாலம்
Three hours

අමතර කියවීමේ 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.

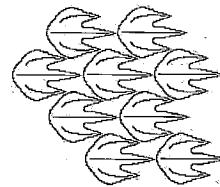
Aquatic Bioresources Technology I

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 (X) 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.

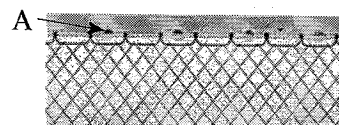
1. The highest annual fish yield in Sri Lanka is harvested from
 (1) offshore. (2) inshore coastal area.
 (3) freshwater reservoirs and aquaculture. (4) brackishwater aquaculture.
2. The optimum level salinity of a water source where the Tiger shrimp can live is
 (1) 0 ppt. (2) 0.4 ppt. (3) 15 ppt. (4) 40 ppt.
3. When fish species are imported for aquaculture, they are known as
 (1) endemic fish. (2) native fish.
 (3) wild fish. (4) exotic fish.
4. The ecosystem, known as 'rainforest' in ocean is
 (1) coral reefs. (2) sea algae. (3) mangroves. (4) seagrass.
5. Tides are mainly caused by the gravitational influence of the
 (1) moon. (2) sun. (3) moon and sun. (4) moon and earth.
6. Two invasive species that cause biodiversity degradation in freshwater aquatic ecosystems are
 (1) Snakehead and Lotus. (2) Tank cleaner and Salvinia.
 (3) Field crab and Typha. (4) Water leech and Water-hyacinth.
7. "Water crabs" are crabs
 (1) with more flesh. (2) live in brackishwater.
 (3) with soft exoskeleton. (4) suitable for breeding.
8. What is the aquatic plant from the following that seeds are taken as food?
 (1) Lotus (2) Aponogeton
 (3) Marsh Barbel (4) Crabapple mangrove
9. The oldest method of fish preservation is
 (1) drying. (2) smoking. (3) salting. (4) chilling.

10. Maldives fish production is a major industry in
 (1) India. (2) Sri Lanka. (3) Maldives. (4) South Africa.
11. After consuming a fish curry, a child, had a rash on his body and vomited. The name of the fish species that he consumed could be,
 (1) Trivalley. (2) Seer. (3) Skipjack tuna. (4) Snakehead.
12. The scales shown in the picture belongs to
 (1) Tilapia. (2) Sardine. (3) Shark. (4) Rockfish.
13. The main purpose of setting up a fish pond in a school premises is,
 (1) making economic profit. (2) entertainment. (3) education. (4) food production.
14. A food that can be given to fighter fish is,
 (1) Ulva. (2) Moina. (3) Sargassum. (4) Chlorophyta.
15. The nutrient which should be provided in high amount for a growing food fish is
 (1) lipid. (2) carbohydrate. (3) protein. (4) vitamins and minerals.
16. A common feed used in fish farming in ponds is
 (1) green leaves. (2) animal flesh. (3) pellet. (4) artemia.

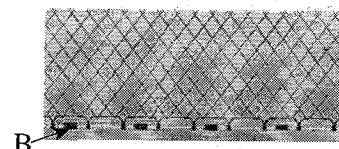


● A picture of a gillnet is given below. Answer the question number 17 and 18 based on it.

17. A material which can be used for A is
 (1) cork. (2) iron. (3) stone. (4) lead.



18. Commonly used material for B is
 (1) clay. (2) lead. (3) rigifoam. (4) timber.



19. The common natural disaster, that affects the aquatic organisms in a seasonal tank of the dry zone is
 (1) soil erosion (2) floods. (3) draught. (4) cyclone.
20. The fish product produced by mixing corn flour is
 (1) smoked fish. (2) fish sauce. (3) canned fish. (4) fish balls.
21. Management of aquatic resources mainly through state laws and regulations are called
 (1) community-based management. (2) enforcement management. (3) community-based shared management. (4) management of specialized areas.

● Some regions of Sri Lanka is given below. Answer question number 22 and 23 based on them.

A – Colombo	D – Hambanthota
B – Kalpitiya	E – Galle
C – Trincomalee	

22. The largest natural harbour in Sri Lanka is located in
 (1) A. (2) C. (3) D. (4) E.
23. Internationally renowned 'Bar' coral reef is situated in
 (1) B. (2) C. (3) D. (4) E.

24. Some statements on Cherry Barb of Sri Lanka are given below.

- A - Endemic fish in Sri Lanka.
- B - A brackishwater fish.
- C - Produce many offspring in a short period of time.

Of the above, true statement/statements is/are

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

25. One of the main activities that promote tourism related to aquatic bioresources in Sri Lanka is

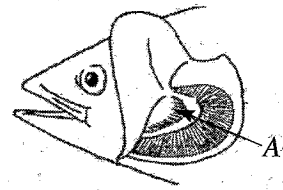
- (1) Dolphin and Whale watching in Mirissa. (2) visiting Delf Island in Jaffna.
(3) visiting Pigeon Island in Trincomalee. (4) visiting Unawatuna beach in Galle.

26. As a result of 'camouflage' of some fish

- (1) their body temperature can be maintained constantly.
(2) they can obtain protection from predators.
(3) they can facilitate migration and immigration.
(4) they can adapt to new environment easily.

27. What is the function of the structure labelled as A shown in the figure?

- (1) Filtering food
(2) Identifying senses
(3) Excretory function
(4) Protecting gills



28. Some statements related to placing a fish tank is given below.

- A - A well ventilated place
- B - Placing close to doors and windows
- C - Placing open to direct sunlight

Of the above the most correct statement/statements is/are,

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

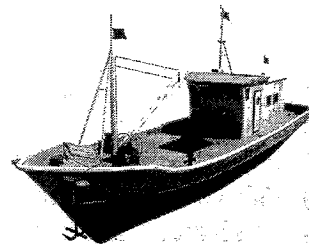
29. The agency that has the authority to issue an environmental protection permit for a tiger shrimp culture is the,

- (1) Ministry of Marine and Aquatic Resources.
(2) Coastal Conservation Department.
(3) National Aquaculture Development Authority.
(4) Central Environmental Authority.

● Answer the question number 30 and 31 based on the given picture.

30. The picture given here is a,

- (1) ship.
(2) multi-day boat.
(3) dhinghi boat.
(4) 3.5 ton boat.



31. The power required to operate the vessel shown in figure is supplied by,

- (1) petrol (2) diesel (3) kerosene (4) wind

32. Some types of nets used on catching fish are given below.

- A - gillnet
- B - cast net
- C - scoop net

Of the above, passive net/nets is/are,

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

33. Select the correct statement on aquatic eco-system.

- (1) Estuary is a freshwater aquatic ecosystem.
- (2) Seagrass grow submerged in deep sea.
- (3) Algae grow abundantly around rocky reefs.
- (4) During rainy season, villu are formed by inundation of brackishwater sources.

34. Some statements on transportation of fish yield are given below.

A - As soon as the fish unloaded from the boat it must be mixed with ice.

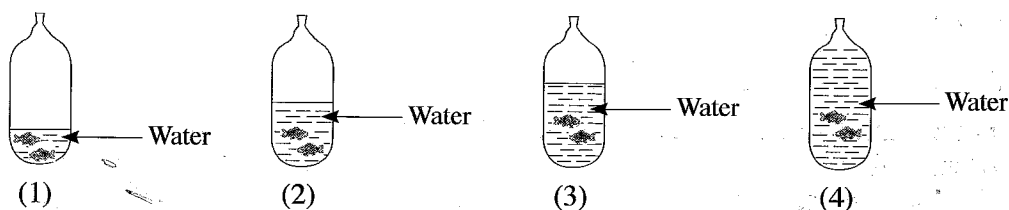
B - Stainless steel containers, with ice must be used to transport fish.

C - Fish should be unloaded at night and transported in the morning.

Of the above, true statements/s is/are

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

35. Select the correctly filled bag with fish for export.



36. The following characteristics were observed in an aquatic plant grown in a water source.

- Roots are attached to the substrate below water
- The aerial stem is imerged above the water

According to the above characteristics, this plant may be

- (1) Lily.
- (2) Nile cabbage
- (3) Vallisneria
- (4) Typha

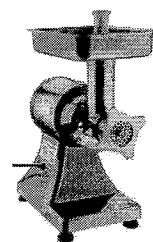
37. Fish is a (A) food item, as it contains high amount of (B)

Select the option which contains the correct answers for A and B in order.

- (1) tasty, bones
- (2) nutritions, fat
- (3) perishable, moisture
- (4) quality, pigments

38. Using the device shown in figure, fish can be

- (1) minced.
- (2) boiled.
- (3) deboned.
- (4) cut into slices.



39. The rate of spoilage of fish is, higher in

- (1) large fish compared to small fish.
- (2) fish with low fat percentage than fish with high fat percentage.
- (3) fish with thick skin slime than fish with thin skin slime.
- (4) herbivorous fish than carnivorous fish.

40. Two statements on lighthouses are given below.

A - Lighthouses are located in coastal areas in Sri Lanka.

B - Lighthouses help vessels navigating at night to identify the correct route and danger points.

Of the above,

- (1) Both A and B statements are correct.
- (2) Both A and B are correct and A further explains B.
- (3) Both A and B are correct and B further explains A.
- (4) A is correct and B is incorrect.

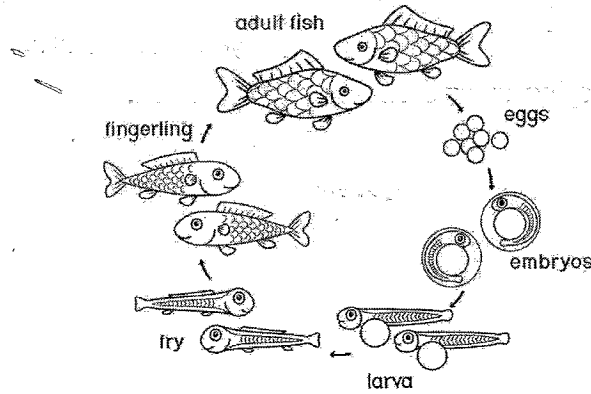
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 கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2023(2024)
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நீருயிரினவளத் தொழினுட்பவியல்	I, II
Aquatic Bioresources Technology	I, II

Aquatic Bioresources Technology II

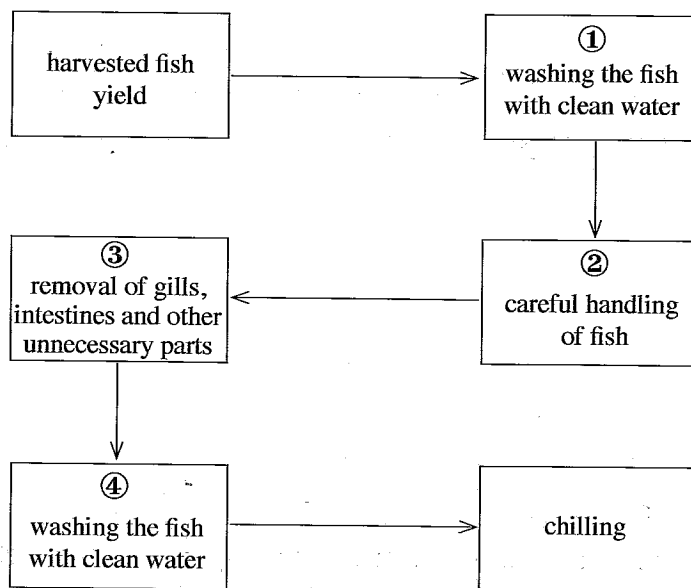
* Answer five questions only, selecting the first question and four others.

1. (A) The life-cycle of a food fish, suitable for growing in a freshwater reservoir is given below.



- (a) What is the most suitable stage in the life cycle of fish to introduce to the reservoir for cultivation?
 - (b) State **two** types of foods that are more suitable to feed fish of above stage.
 - (ii) What is the reproductive method of this fish?
 - (iii) State **two** fish species having the same life cycle as shown in figure.
 - (iv) State **two** characteristics that can distinguish from a mature female fish from a male fish.
 - (v) State **two** reservoirs, used for freshwater fish culture in Sri Lanka.
 - (vi) Describe the importance of understanding the life cycle of a fish in aquaculture.
- (B) Ludwigia is an ornamental aquatic plant, propagated by stem cuttings.
- (i) Draw a labelled diagram of a Ludwigia stem cutting prepared for propagation.
 - (ii) Describe the way of preparing media for propagation.
 - (iii) Describe the way of planting the stem cutting in a pot.
 - (iv) State **two** measures to be taken to maintain the potted Ludwigia cultivation.
2. "Jaadi" is a traditional fish preserving method in Sri Lanka.
- (i) (a) State a major fish species used in jaadi production in Sri Lanka.
 - (b) Describe the process of jaadi production using above stated fish-species.
 - (ii) Describe **two** issues that jaadi producers face in Sri Lanka.
 - (iii) Describe the importance of preserving fish using traditional methods.

3. It is a challenge to maintain the sustainability of aquatic ecosystems in Sri Lanka, due to various threats.
- Describe the importance of aquatic ecosystems in Sri Lanka.
 - (a) State **two** government institutions that work towards sustainability of aquatic ecosystems.
(b) Describe how **one** of those institutions works for it.
 - (a) State **four** threats affecting the sustainability of aquatic ecosystems in Sri Lanka.
(b) State **two** suggestions to minimize these threats.
4. In ornamental fish culture in glass tank, an average, 2.5 cm long ornamental fish requires 64 cm² of space.
- Calculate the maximum number of such fish, that can be placed in a 80 cm long and 40 cm wide tank.
 - (a) State **four** issues caused by putting more than the maximum number of fish to the tank.
(b) State **two** actions to be taken to avoid the issues you stated above.
 - Describe the benefits of keeping ornamental fish in glass tanks.
5. It is important to follow the steps given below to maintain the maximum quality of harvested fish.



- State separately how following the above steps ①, ②, ③ and ④ help to maintain the quality of fish.
- (a) State **two** methods used to chill fish in the vessel.
(b) Of the two methods, describe with reasons, which method can obtain better results.
- Describe the way of harvesting fish while keeping its quality to the maximum.

6. Mud pond culture is one of the main methods, used in food fish culture in Sri Lanka.
- (i) State **four** factors to be considered when choosing a location to put up a mud pond for fish culture.
 - (ii) Describe **four** advantages of rearing food fish in a mud pond.
 - (iii) (a) State **two** types of fish suitable for brackishwater pond culture.
(b) Describe the method of harvesting fish in a standard size mud pond.
7. There is a potential for further development of aquatic bio resources industry in Sri Lanka.
- (i) (a) State **two** infrastructure facilities, important to the development of aquatic bioresources industry.
(b) Describe how these infrastructure facilities affect the development of aquatic bioresources industry.
 - (ii) (a) State **four** problems faced in the aquatic bioresources industry.
(b) State **four** solutions to solve **one** of the above problems.
 - (iii) (a) Name an environmental friendly craft used in aquatic resources industry in Sri Lanka.
(b) Describe how the craft you stated is eco-friendly.
