Sikkim Public Service Commission
Main (Written) Examination for the post of
Fisheries Block Officer

INSTRUCTIONS TO CANDIDATES

Read the instructions carefully before answering the questions: -

1. **This Test Booklet consists of 8 (eight) pages and has 52 (fifty-two) printed questions.**

2. **IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET DOES NOT HAVE ANY UNPRINTED, TORN OR MISSING PAGES OR ITEMS. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.**

3. **Use only Black Ball Point Pen to fill the OMR Sheet.**

4. Please note that it is the candidate's responsibility to fill in the Roll Number carefully without any omission or discrepancy at the appropriate places in the **OMR ANSWER SHEET** as well as on **SEPARATE ANSWER BOOKLET** for Conventional Type Questions. Any omission/discrepancy will render the Answer Sheet liable for rejection.

5. Do not write anything else on the OMR Answer Sheet except the required information. Before you proceed to mark in the OMR Answer Sheet, please ensure that you have filled in the required particulars as per given instructions.

6. This Test Booklet is divided into 3 (three) parts – **Part-I, Part-II** and **Part-III**.

7. All three parts are **Compulsory**.

8. **Part-I consists of Multiple-Choice Questions**. The answers for these questions have to be marked in the **OMR Answer Sheet** provided to you.

9. **Parts II and III consist of Conventional Type Questions.** The answers for these questions have to be written in the **Separate Answer Booklet** provided to you.

10. After you have completed filling in all your responses on the OMR Answer Sheet and the Answer Booklet(s) and the examination has concluded, you should hand over the OMR Answer Sheet and the Answer Booklet(s) to the Invigilator only. You are permitted to take the Test Booklet with you.

11. **Marking Scheme**

    THERE WIL BE **NEGATIVE MARKING** FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBECTVE TYPE QUESTIONS

    (i) There are four alternatives for the answer to every question. **For each question for which a wrong answer has been given by the candidate, one-third of the marks assigned to the question will be deducted as penalty.**

    (ii) If a candidate gives more than one answer, it will be treated as a wrong answer even if one of the given answers happens to be correct and there will be same penalty as above to the question.

    (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be no penalty for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

PART – I
(Multiple Choice Questions)

Choose the correct answer for Questions 1 to 40 from the given options. Each question carries 1 mark.

[40 x 1 = 40]

1. Whale sharks belong to the family -
   - (a) Heterodontidae
   - (b) Carcharinidae
   - (c) Squalidae
   - (d) Rhincodontidae

2. Mudbanks are prevalent in which of the following states?
   - (a) Tamil Nādu
   - (b) Kerala
   - (c) Goa
   - (d) West Bengal

3. The first state in India to impose THE Fisheries Act is -
   - (a) Kerala
   - (b) Maharashtra
   - (c) Punjab
   - (d) Tamil Nadu

4. Cheer fishing also takes place during the months of -
   - (a) March-April
   - (b) June-July
   - (c) September-October
   - (d) November-January

5. The first trout hatchery in India was established at -
   - (a) Avalanche
   - (b) Manali
   - (c) Kullu
   - (d) Srinagar

6. Indian mackerel belongs to the family -
   - (a) Clupeidae
   - (b) Scombridae
   - (c) Carangidae
   - (d) Engraulidae

7. Bombay duck fishing is done using -
   - (a) Trawl net
   - (b) Gill net
   - (c) Dol net
   - (d) Purse seine

8. A cohort consist of -
   - (a) Individuals of same age
   - (b) Individuals of same feeding habit
   - (c) Same breeding nature
   - (d) All of the above

9. The MSY could be defined as the -
   - (a) Largest catch
   - (b) Largest catch without affecting fish population
   - (c) Largest catch affecting fish population
   - (d) None of the above

10. Eyed ova are associated with -
    - (a) Mahseers
    - (b) Trouts
    - (c) Gars
    - (d) Catfishes

11. The scientific name of Chocolate mahseer is:
    - (a) *Tor putitora*
    - (b) *Neolissochilus hexagonolepis*
    - (c) *Tor khudree*
    - (d) *Tor malabaricus*

12. Chilka lake is located in -
    - (a) Andhra Pradesh
    - (b) Odisha
    - (c) West Bengal
    - (d) Tamil Nadu

13. The level of marine fish production in India during 2019 was -
    - (a) 2.5 MMT
    - (b) 3.0 MMT
    - (c) 3.5 MMT
    - (d) 5.0 MMT

14. Which of the following is a nitrifying bacteria?
    (a) *Nitrobacter*
    (b) *Achromobacter*
    (c) *Pseudomonas*
    (d) *Bacillus*

15. Which of the following is not water efficient culture system?
    (a) Biofloc
    (b) RAS
    (c) Raceways
    (d) Ponds

16. *Lab lab* is an important food for -
    (a) Tilapia
    (b) Murrel
    (c) Milkfish
    (d) All of the above

17. Off-flavours in fishes occur due to -
    (a) Geosmin
    (b) Chlorine
    (c) High ammonia
    (d) None of the above

18. Amur is an improved strain of -
    (a) Silver carp
    (b) Grass carp
    (c) Common carp
    (d) Rohu

19. Scientific name of Roopchand fish is -
    (a) *Piaractus brachypomus*
    (b) *Ompok bimaculatus*
    (c) *Priacanthus macracanthus*
    (d) None of the above

20. The dissolved oxygen level in wastewater is about -
    (a) 2 ppm
    (b) 1.5 ppm
    (c) 1 ppm
    (d) almost 0 ppm

21. The water quality parameter related to buffering action is -
    (a) Hardness
    (b) pH
    (c) Alkalinity
    (d) All of the above

22. Kakabans are used for breeding of -
    (a) Gold fish
    (b) Common carp
    (c) Guppy
    (d) Molly

23. Stocking density of carps in broodstock pond is -
    (a) 500 kg/ha
    (b) 750 kg/ha
    (c) 1000 kg/ha
    (d) 1500 kg/ha

24. Scientific name of fringed lipped carp is -
    (a) *Labeo dero*
    (b) *Labeo fimbriatus*
    (c) *Labeo gonius*
    (d) *Labeo bata*

25. Weight of 1 million carp spawn is -
    (a) 0.5 kg
    (b) 1.0 kg
    (c) 1.5 kg
    (d) 2.5 kg

26. Steelhead is a variety of -
    (a) Mahseer
    (b) Trout
    (c) Salmon
    (d) Tilapia

27. Pond pH is most alkaline during _____.
    (a) Mid-afternoon
    (b) Just before day break
    (c) Evening
    (d) None of the above

28. Nageshwari is a variety of -
    (a) Hen
    (b) Duck
    (c) Pig
    (d) Rabbit

29. Liming material used during pond preparation is -
    (a) Slaked Lime
    (b) Quick lime
    (c) Hydrated lime
    (d) None of the above

30. Scientific name of guppy is -
    (a) *Poecilia reticulata*
    (b) *Xiphophorus maculatus*
    (c) *Danio rerio*
    (d) None of the above

31. Atmospheric oxygen gets transferred to a water-body through the process of -
    (a) Diffusion
    (b) Absorption
    (c) Dissolution
    (d) None of the above

32. Sea monkey is a marketing term used to refer to -
    (a) *Moina*
    (b) *Daphnia*
    (c) *Artemia*
    (d) *Fabrea*

33. Algal cells can be counted with the help of -
    (a) Vernier scale
    (b) Haemocytometer
    (c) Stage micrometer
    (d) None of the above

34. Paddle wheel aerators are type of
    (a) Gravity aerator
    (b) Surface aerator
    (c) Turbine aerator
    (d) Dissolved aerator

35. Bowl shaped fishing boats used in reservoirs is called a _____.
    (a) Coracle
    (b) Catamaran
    (c) Dinghi
    (d) None of the above

36. Otter boards are used in -
    (a) Seines
    (b) Trawls
    (c) Gill nets
    (d) All of the above

37. Which of the following is not correct about Cobb-Douglas Production function?
    (a) Non linear
    (b) Log linear
    (c) Linear
    (d) Widely used production function

38. If the value of r (correlation coefficient) is zero, then there is a -
    (a) Perfect correlation
    (b) No correlation
    (c) Positive correlation
    (d) Negative correlation

39. Extension Education may cause enhancement in
    (a) Confidence
    (b) Motivation
    (c) Skill
    (d) All of the above

40. The first KVK in India was established in -
    (a) Tamil Nadu
    (b) Punjab
    (c) Assam
    (d) Pondicherry

PART – II
(Conventional Type Questions)
Answer any 6 (six) from Questions 41 to 48. Each question carries 5 marks.

[6 x 5 = 30]

41.   What are the climate change impacts, vulnerabilities and adaptations for fisheries?

42.   What are the different synthetic hormones used for induced breeding? Narrate the chemical composition of the mentioned hormones?

43.   What are the biotechnological approaches used in improvement and conservation of genetic stock of fishes?

44.   What are the different sources of aquatic pollution? Describe two remedial approaches for mitigating the same?

45.   What are the different netting materials used for making fishing nets? Describe the characteristics and preservation methods?

46.   What are the different canning and packaging techniques used for processing and preservation of fish products?

47.   List out the different sampling techniques used in fisheries extension? What is the difference between participatory rural appraisal (PRA) and rapid rural appraisal (RRA)?

48.   What is the current status and prospects of cold-water fisheries in India?

PART – III
(Conventional Type Questions)
Answer any 2 (two) from Questions 49 to 52. Each question carries 15 marks.

[2 x 15 = 30]

49.   Write an essay on the different water resources suitable for fish culture in India? Describe the different culture practices that can be adopted for utilizing the open water bodies in India?

50.   Narrate the different crafts and gears used in inland fisheries in India with suitable diagram?

51.   Give an account of the morphological features and culture value of trouts and mahseer. Describe the artificial breeding method of trouts and mahseer?

52.   What are the pre and post management measures to be undertaken during grow-out culture of carps? List out the importance of liming and different liming materials used in aquaculture?

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