

REV-01
MSZ/19/24

2023/06

M.Sc. ZOOLOGY
FOURTH SEMESTER
FISH & FISHERY BIOLOGY-II
MSZ-402 C
[USE OMR SHEET FOR OBJECTIVE PART]

SET
B

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- In fish preservation during Deep freezing or quick freezing requires rapid lowering of temperature reaching to.....
 - +20°C
 - 40°C
 - 80°C
 - All of the above
- Whirling disease in *Cirrhinus mrigala* (Ham) observed by Maheswari (1986) has been attributed to a protozoan parasite:
 - Myxoma dudenele*
 - Myxoma spiralis*
 - Myxosoma cerebralis*
 - All of the above
- The greatest advantage of cage culture is that it allows high stocking density till DO becomes a:
 - Positive factor
 - Limiting factor
 - Optimum
 - Normal
- In an intensive system in raceways an aerator is used to supply additional:
 - Nitrogen to the fish
 - Oxygen to the fish
 - Additional sulphate to the fish
 - None of the above
- Domestic sewage in the sewage fed fish culture contains about 250-400 gm of organic carbon and 80-120 ppm of total Nitrogen thus making C:N ratio of around:
 - 8:1
 - 3:1
 - 1:1
 - 2:2
- If there is an increase in chromosome number through hybridization between different species, it is called:
 - Allo-polyploidy
 - Semi-polyploidy
 - Auto-polyploidy
 - None of these
- What maintains the water balance in elasmobranchs?
 - Carbon cycle
 - High water pressure
 - Urea cycle
 - High salinity
- A kidney with its extreme poster positions fused and no distinction between head and trunk is seen in:
 - Syngnathidae
 - Percidae
 - Anguillidae
 - Clupeidae

9. Chromosomes in fishes do not undergo mutation by:
 - a. Deletion
 - b. Limitation
 - c. Translocation
 - d. Inversion
10. During long photoperiod, gonadal development is stimulated by:
 - a. Sunlight
 - b. Rainfall
 - c. Clean water
 - d. Pineal gland
11. The component of sewage in sewage fed fisheries is approximately:
 - a. 2%
 - b. 1%
 - c. 99%
 - d. 45%
12. The whole process referred to as 'eutrophication', as a result of which there is excessive growth of phytoplankton due to.....
 - a. Macrophytic loss
 - b. Element deficiency
 - c. Nitrogen deficiency
 - d. Nutrient enrichment
13. In waste water treatment in sewage fed fish culture primary treatment is done by:
 - a. Filtering & Skimming only
 - b. Skimming only
 - c. Screening, skimming, sedimentation
 - d. None of the above
4. In cage culture practices the term 'Cage' is also used interchangeably with:
 - a. Still pens
 - b. Net pens
 - c. Gears
 - d. Traps
5. A fish is of good market value if it weighs:
 - a. 90 gm and above
 - b. 100 gm
 - c. 750 gm and above
 - d. 150gm
6. Which among these is not a criterion to declare any fish as an endangered species?
 - a. Decrease in sterility
 - b. Decrease in fecundity
 - c. Decrease in growth rate
 - d. Decrease in weight
7. If in a hybridization programme, the two fishes used are closely related with each other than this happens:
 - a. High growth rate
 - b. High strength
 - c. High survival rate
 - d. All of these
8. How many functional glomeruli are present in a fresh water fish?
 - a. 5000
 - b. 8000
 - c. 10000
 - d. 1 lakh
9. Which of these fish catching nets are kept overnight in an aquatic body?
 - a. Drag net
 - b. Gill net
 - c. Cast net
 - d. All of them
0. Which among these glands has a part which is photoreceptive in nature?
 - a. Pineal
 - b. Thyroid
 - c. Pancreas
 - d. Pituitary

-- --- --

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

- | | |
|---|--------|
| 1. Discuss in brief about the Physico-chemical factors of water affecting fish culture in ponds. | 10 |
| 2. What is air-breathing fish? Discuss briefly about air-breathing fish practices and its importance in fishery. | 2+8=10 |
| 3. Discuss briefly about pen culture practices in NE India citing suitable examples. | 10 |
| 4. What do you mean by sewage fed fisheries? Highlight in details about sewage-fed fisheries in India citing suitable examples. | 2+8=10 |
| 5. Discuss the reproductive morphology and pattern of reproduction in bony teleost fishes. | 10 |
| 6. Mention in detail about the role and functions of pineal gland in a teleost. | 10 |
| 7. Discuss about fish hybridization in natural conditions and mentions its merits and demerits. | 10 |
| 8. With diagrammatic representation, mention atleast 08 different forms of fishing craft and gear used in lentic and lotic water systems. | 10 |

= = *** = =