

M.Sc. ZOOLOGY
FOURTH SEMESTER
FISH AND FISHERY BIOLOGY-III
MSZ-401(C)
(USE OMR FOR OBJECTIVE PART)

SET
A

Full Marks: 70

Duration: 3 hrs.

(Objective)

Marks: 20

Time: 30 min.

1X20=20

Choose the correct answer from the following:

1. The pars intermedia of a teleost pituitary gland occupy the _____ region of hypothalamus.
a. Hind
b. Fore
c. Mid
d. None of the above
2. The most important site of hypothalamus in regard to hormone production of pituitary gland is _____.
a. Lateral preopticus
b. Nucleus lateral tuberis
c. Nucleus postopticus
d. None of the above
3. The indirect method used by fish farmers to produce males from females is by feeding methyl testosterone at a dose of _____.
a. 0.5 mg/kg of food
b. 1 mg/kg of food
c. 3 mg/kg of food
d. 4.5 mg/kg of food
4. An important fish genus used as a biological control of malarial larva in India is _____.
a. *Pocilia*
b. *Carassius*
c. *Esomus*
d. *Aplocheilus*
5. Which is the first FDA approved transgenic food fish?
a. AquAdvantage Salmon
b. AquAdvantage Rohu
c. AquAdvantage Carp
d. None of the above
6. The source of origin of import of *Cyprinus carpio* to India is _____.
a. China
b. Sri Lanka
c. Japan
d. Indonesia
7. Which among these layers is not included in the wall of a teleost ovary during breeding season?
a. Thinner peritoneum
b. Thicker tunica albuginea
c. Thicker peritoneum
d. Germinal epithelium
8. The testis of a teleost remains attached to the body wall by the means of _____.
a. Mesorhilia
b. Mesovarium
c. Mesorchium
d. Mesorchia

9. The most common form of performing transgenesis in fishes is
 - a. Microinjection
 - b. Electroporation
 - c. Sperm mediated transfer
 - d. None of the above
10. The condition in which not all cells in embryos have the targeted transgene is called
 - a. Pseudo transgenesis
 - b. Mosaicism
 - c. False gene copy
 - d. None of the above
11. The carbon and nitrogen ratio in sewage fed fisheries is -----
 - a. 3:1
 - b. 9:1
 - c. 8: 8
 - d. 6:0
12. In waste water treatment in sewage fed fish culture Primary treatment is done by
 - a. Screening, skimming , sedimentation
 - b. Filtering and skimming
 - c. Skimming only
 - d. Biofiltration
13. In fish preservation during Deep freezing or quick freezing requires rapid lowering of temperature reaching to -----
 - a. +20°C
 - b. -40 °C
 - c. 78 °C
 - d. 99°C
14. The best example of mountain valley rice fish culture in the region is in the -----
 - a. Nagaland hills
 - b. Apatani Plateau of Arunachal Pradesh
 - c. Burma border
 - d. Dibang valley
15. For better management and easy operation of pens of
 - a. 0.1 to 0.2 ha area is recommended
 - b. Less than 20 ha is recommended
 - c. Above 20 ha is recommended
 - d. 10 ha area is recommended
16. Fish culture in rice fields may attempted in two ways, viz -----
 - a. Simultaneous culture and rotational culture
 - b. Daylight culture and nocturnal
 - c. Alternate and raceway culture
 - d. All of the above
17. Glazing is dipping the frozen fish in water so that finally a layer of -----surrounds the fish
 - a. Soft ice
 - b. Hard ice
 - c. Hard smoke
 - d. Soft smoke

18. Whirling disease in *Cirrhinus mrigala* (Ham) observed by Maheswari (1986) has been attributed to a protozoan parasite

- a. *Myxosomacerebralis*
- b. *Mysilis centralis*
- c. *Myxoma centres*
- d. *Dactylogyrus*

19. Mouth fungus disease in fishes is actually caused from the Bacterium -----

- a. *Chlora vesicular*
- b. *Mysilis centralis*
- c. *Anopheles vesicolor*
- d. *Chlorococcus columnaris*

20. Marine cages are also known as

- a. Trap Cages
- b. Net pens
- c. Canoes
- d. Boat Traps

(Descriptive)

Time : 2 hrs. 30 min.

Marks : 50

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

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| 1. Discuss the structure and parts of the pituitary gland of a teleost with diagram. | 10 |
| 2. What is androgenesis and gynogenesis? Briefly explain the role of these two methods with sex determination. | 3+7 = 10 |
| 3. Discuss in detail the various types of transgenes inducing procedures in fishes with their problems. | 10 |
| 4. Write about the various exotic fishes introduced with detailed explanation of atleast 03 examples. | 10 |
| 5. Elucidate in detail about some of the fish diseases present in India with suitable examples. Draw suitable sketches wherever necessary. | 10 |
| 6. Discuss briefly about air breathing fish culture and its importance in fishery. | 10 |
| 7. Elucidate in detail some methods of fish preservation with suitable examples | 10 |
| 8. What do you mean by sewage fed fisheries? Highlight in details about sewage- fed fisheries in India citing suitable examples. | 10 |

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