

**M.Sc. ZOOLOGY**  
**FOURTH SEMESTER**  
**FISH & FISHERY BIOLOGY**  
**MSZ-402 C**

Duration: 3 Hrs.

Marks: 70

{ Part : A (Objective) = 20 }  
{ Part : B (Descriptive) = 50 }

[ PART-B : Descriptive ]

Duration: 2 Hrs. 40 Mins.

Marks: 50

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

1. What causes spoilage of fish? Explain what is meant by rigor mortis. Describe various methods of fish preservation. (2+3+5=10)
2. What is a transgenic fish? Describe briefly the technique of producing transgenic fish. Explain the benefits of a transgenic fish in aquaculture. (2+3+5=10)
3. Describe the diseases caused by bacteria, viruses and other parasites in fishes. Give various measures to control and treat the diseases. (10)
4. Describe the structure of the pituitary gland and the functions of various hormones in fishes. (10)
5. What is composite fish culture? Outline some of the objectives involved in composite fish culture and Highlight some important aspects of composite fish culture in India. (2+8=10)
6. Discuss briefly about the fishing crafts in NE India. (10)
7. What is Aquaculture? Underline the objectives of aquaculture and also highlight the scope of aquaculture In India. (1+2+7=10)
8. Write short notes on : (a) Chinese dip net (b) Gill net (5+5=10)

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**[ PART-A : Objective ]**

Choose the correct answer from the following:

1X20=20

1. The stiffness of muscle during 'Rigor mortis' is  
 a. due to complete loss of ATP.  
 b. due to presence of ATP.  
 c. due to presence of the creatine phosphate of the muscle.  
 d. due to lack of supply of oxygen to the muscle.
2. Omega -3 fatty acids present in fish is good for  
 a. neural control.  
 b. low blood cholesterol.  
 c. healthy skin.  
 d. low blood pressure.
3. Spoilage in marine fishes is due to  
 a. Trimethylamine oxide content.  
 b. high urea content in body fluid.  
 c. low phosphocreatine.  
 d. high salt content.
4. 'CAVIAR' is the product obtained from  
 a. *Acipenser*  
 b. *Salmon*  
 c. *Scoliodon*  
 d. *Lepidosteus*
5. In a fishery pond, a few fish show the characteristic symptom of the presence of light bluish or greyish film of mucus over the body, loses appetite, weak and some die after some time. Which of the following would be the possible disease?  
 a. Ichthyophthiriasis  
 b. Dropsy  
 c. Costiasis  
 d. Saprolegniasis
6. .... contains maximum amount of water in its body composition.  
 a. Bombay duck  
 b. *Xenentodon cancila*  
 c. Ribbon fish  
 d. Sardine

7. The gene which can be used in the production of transgenic fishes having bioindicator and ornamental value is  
 a. GFP gene  
 b. AFP gene  
 c. AFGP gene  
 d. GH gene
8. Which of the following statement is not true for gynogenesis in hybridization of fish?  
 a. The irradiated spermatozoa enter the micropyle of the egg and activate development.  
 b. There is any paternal genetic contribution to the development of embryo.  
 c. The embryo is haploid and contains only maternal chromosomes.  
 d. The ovum develops into a zygote after activation by normal sperm but without contribution from maternal side.
9. Cod liver oil is used to cure both 'rickets' and 'xerophthalmia'. It is due the presence of high content of  
 a. Vitamin E and K  
 b. Vitamin A and D  
 c. Vitamin A and C  
 d. Vitamin D and B<sub>17</sub>
10. Injection of Pituitary gland extracts to fish induces  
 a. Gonadal development  
 b. Secretion of sex hormones  
 c. Sex  
 d. Ovulation
11. A pen is defined as a fixed enclosure in which  
 a. the bottom is the bed of the water body.  
 b. enclosed on all sides.  
 c. the top is free and bottom is enclosed.  
 d. does not have any contact with water body.
12. For better management and easy operation, the recommended area for pens should be of  
 a. 0.1 to 0.2 hectare  
 b. 10 hectare  
 c. less than 20 hectare  
 d. above 20 hectare
13. Cage culture, in recent years, has been considered as a highly specialized and sophisticated modern  
 a. Aquaculture technique  
 b. eri-fish culture  
 c. Ichthyological technique  
 d. Seri cum fish aquaculture

14. Cage culture is the culture of fish or other organisms in a river, lake or bays by holding them

- a. in cages.
- b. in Traditional pots supported by cages.
- c. swing door cages.
- d. all of the above.

15. Apatani Plateau of Arunachal Pradesh is an example of

- a. rice culture in valleys.
- b. mountain valley rice-fish culture.
- c. fish culture in rice fields.
- d. all of the above.

16. In districts of Barpeta, Bongaigaon and Kokrajhar rice fields are often connected by canal systems locally called as

- a. Dong
- b. Pong
- c. Bhong
- d. Rong

17. Intensive aquaculture relies on technology to raise fish in artificial tanks

- a. at very high densities.
- b. at low densities.
- c. at high as well as low densities.
- d. all of the above.

18. *Anabus testudineus* is also known as

- a. Perch eating parrot
- b. Perch
- c. Climbing perch
- d. Organic fish

19. *Channa striatus* is also known as

- a. Snakehead fish
- b. Climbing fish
- c. Jumping fish
- d. Rowing fish

20. Banana raft is also known in Assam as

- a. Bhel pao
- b. Kolor bhel
- c. Bagora
- d. none of the above

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# UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



## Question Paper CUM Answer Sheet

### [PART (A) : OBJECTIVE]

Serial no. of the main Answer sheet

Course : .....

Semester : ..... Roll No : .....

Enrollment No : ..... Course code : .....

Course Title : .....

Session : ..... 2016-17 ..... Date : .....

#### Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- The student shall write the answer in the box where it is provided.
- The student shall not overwrite / erase any answer and no mark shall be given for such act.
- Hand over the question paper cum answer sheet (Objective) within the allotted time (20 minutes / 10 minutes) to the invigilator.

Full Marks	Marks Obtained	Remarks
20		

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature