

(ZOO40112)

UNIT III

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper I — AQUATIC TOXICOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on use and misuse of inland waters in India.

Or

2. Write short notes on  
(a) Acid rains  
(b) Industrial pollution.

UNIT II

3. Describe the origin and classification of pesticides.

Or

4. Write short notes on  
(a) Bio-magnification  
(b) Bioconcentration.

5. Give an account on radiation pollution and its effects.

Or

6. Write short notes on  
(a) Thermal pollution  
(b) Nuclear fission.

UNIT IV

7. Describe the methods of water quality testing and treatment.

Or

8. Write short notes on  
(a) Bio indicators  
(b) Sewage treatment.

UNIT V

9. Give an account on pollution control laws and acts in India.

Or

10. Write short notes on  
(a) Environmental impact on culture  
(b) Safety of environment

**(ZOO40212)**

M.Sc. DEGREE EXAMINATION,

APRIL 2018.

Fourth Semester

Zoology

Paper II — AQUACULTURE MANAGEMENT

(Regulation - 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

**UNIT I**

1. Give an account on concept, principle and practices of organic aquaculture.

Or

2. Write short note on:

- (a) Abiotic factors of water for fish life
- (b) Ecological characters of rivers.

**UNIT II**

3. Give an account on the design and construction of fish farms.

Or

4. Write short note on:

- (a) Water circulation systems
- (b) Pen culture.

**UNIT III**

5. Give an account on natural productivity of ponds.

Or

6. Write short note on:

- (a) Reservoir fisheries
- (b) Management of fish production.

**UNIT IV**

7. Describe the formulation and preparation of fish feeds.

Or

8. Write short note on:

- (a) Nutritional requirements of shrimp
- (b) Feed conversion ratio.

**UNIT V**

9. Give a detailed account on cost benefit analysis in fishery.

Or

10. Write short note on:

- (a) Variable costs
- (b) Concept of fish marketing.

(ZOO40312)

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper III — AQUACULTURE

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. What is the criteria for the selection of a species for culture? Explain.

Or

2. Write short notes on :  
(a) Intensive culture  
(b) Traditional culture.

UNIT II

3. Give an account on use of synthetic hormones in aquaculture.

Or

4. Write short notes on :  
(a) Hypophysation  
(b) Rearing ponds.

UNIT III

5. Give an account on the culture of seaweeds.

Or

6. Write short notes on :  
(a) Pearl Oysters culture  
(b) Culture of Lates.

UNIT IV

7. Give an account on genetic improvement of fish stocks.

Or

8. Write short notes on :  
(a) Ornamental fish culture  
(b) Mussel culture.

UNIT V

9. Give an account on production of transgenic fish.

Or

10. Write short notes on :  
(a) Androgenesis  
(b) Polyploidy.

**(ZOO40412)**

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper IV — IMMUNOLOGY

(Regulation 2012)

Maximum : 70 marks

Time : Three hours

Answer ONE question from each Unit.

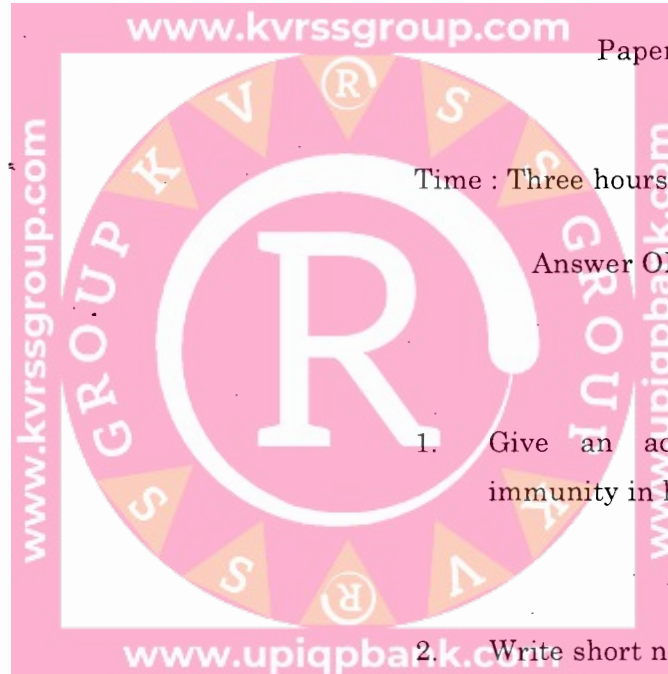
UNIT I

1. Give an account on natural and acquired immunity in humans.

Or

2. Write short notes on :

- (a) Accessory cells
- (b) Immunoglobulins.



UNIT II

3. Give an account on hypersensitivity.

Or

4. Write short notes on :

- (a) MMC class-II
- (b) Immune response.

UNIT III

5. Describe the structure and function of lymphoid organs in fish.

Or

6. Write short notes on :

- (a) Acquired immunity in fishes.
- (b) Fish immunoglobulins.

UNIT IV

7. Give a detailed account on radio immunoassays.

Or

8. Write short notes on :

- (a) ELISA
- (b) Hybridoma technique.

UNIT V

9. Give an account on strategy and use of vaccines in aquaculture.

Or

10. Write short notes on :

- (a) Human vaccines
- (b) Immunostimulants in fish.



(ZOO40116)

UNIT III

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper I — AQUACULTURE TECHNOLOGY AND  
MANAGEMENT

(Regulation 2016)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Describe the design and construction of finfish hatcheries.

Or

2. Give an account on construction and management of prawn hatcheries.

UNIT II

3. Give an account on the use of bio-fertilizers in aquaculture.

Or

4. What are the effects of liming of pond ecosystem? Explain.

5. Give a detailed account on harvesting methods in drainable ponds and cage farms.

Or

6. Describe the processing and preservation of fish products.

UNIT IV

7. Give an account on pesticide pollution in aquaculture.

Or

8. Write an essay on global warming.

UNIT V

9. Give an account on economic feasibility of investment in aquaculture and add a note on risk and insurance.

Or

10. Give an account on marketing and resource management in fish exports.

(ZOO40216)

UNIT III

M.Sc. DEGREE EXAMINATION,  
APRIL 2018.

Fourth Semester

Zoology

Or

Paper - II : BIOTECHNOLOGICAL APPLICATIONS IN  
AQUACULTURE

(Regulation - 2016)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on nutritional requirements of cultivable finfish and shell fish at different stages of life.

Or

2. Give an account on the importance and use of antibiotics in feeds.

UNIT II

3. Describe the endocrine control of reproduction in shell fish.

Or

4. Write an essay on egg incubation and larval rearing in finfish.

5. Give an account an application of genetics in aquaculture.

6. Describe the development of disease. resistant and high quality strains.

UNIT IV

7. Give an account on culture of milk fish.

Or

8. Give an account on disease diagnostic techniques in aquaculture.

UNIT V

9. Give an account on the role of CMFRI and CIFT in the development a aquaculture in India.

Or

10. Describe the functions of CIFNET and its significance.

(ZOO40316)

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper III — DISEASES OF AQUATIC ORGANISMS

(Regulation - 2016)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on clinical symptoms, pathology and control measures of Infectious Haematopoietic Hypodermal necrosis (IHHNV) in fishes.

Or

2. Describe the pathology, clinical symptoms, prevention and treatment of Hepto pancreatic parvolike viral disease in shrimp.

UNIT II

3. Write an account on pathology and control measures of infections Dropsy in fishes.

Or

4. Write an account on pathology and control measures of filamentous bacterial gill disease in shrimps.

UNIT III

5. Describe the clinical symptoms, pathology, control measures and treatment of branchiomycosis in fishes.

Or

6. Give an account on pathology, clinical symptoms, prevention and treatment of fusarium disease in shrimp.

UNIT IV

7. Give an account on clinical symptoms, pathology and control measures of myxosporidiasis in fishes.

Or

8. Write a detailed account on disease signs and Management of zoothamnium.

UNIT V

9. Give an account on clinical symptoms, pathology and control measures of gas bubble disease in fishes.

Or

10. Write notes on:

- (a) Red disease
- (b) Muscle necrosis
- (c) Blue shell syndrome.

(ZOO40416)

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Fourth Semester

Zoology

Paper IV — CONSERVATION AND MANAGEMENT  
OF AQUATIC LIVING RESOURCES

(Regulation 2016)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on the distribution and utilization of mangroves.

Or

2. Give a detailed account on distribution of marine mammals.



UNIT II

UNIT V

3. Give an account on genetic drift and gene flow.

9. What are the new perspectives in conservation? Explain.

Or

Or

4. Give an account on levels of biodiversity and add a note on species diversity indices.

10. Give an account on the management of marine living resources.

UNIT III

5. Give an account on threats to biodiversity and species extinction.

Or

6. Write an account on threats to aquatic biodiversity.

UNIT IV

7. Give an account on biosphere resource and protected areas in India.

Or

8. Give an account on species management plans and captive breeding.