

(ZOO 40112)

M.Sc. DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Zoology

Paper I — AQUATIC TOXICOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions choosing ONE from each unit.

All questions carry equal marks.

Draw the diagram wherever necessary.

(5 × 14 = 70)

UNIT I

1. Give an account on the management and conservation of aquatic resources.

Or

2. Write a short notes on:
  - (a) Acid rains
  - (b) Misuse of Inland waters.

UNIT II

3. Explain the classification of pesticides with suitable examples.

Or

4. Write a short note on:

- (a) Biomagnification
- (b) Pesticide effects on non-target organisms.

UNIT III

5. Discuss the deleterious effects of alpha, beta and gamma rays on organisms.

Or

6. Write a short note on:

- (a) Nuclear fusion experiments
- (b) Temperature effect on growth of animals.

UNIT IV

7. Describe the methods of water quality testing in detail.

Or

8. Write a short note on:

- (a) Bioindicators
- (b) Sewage composition

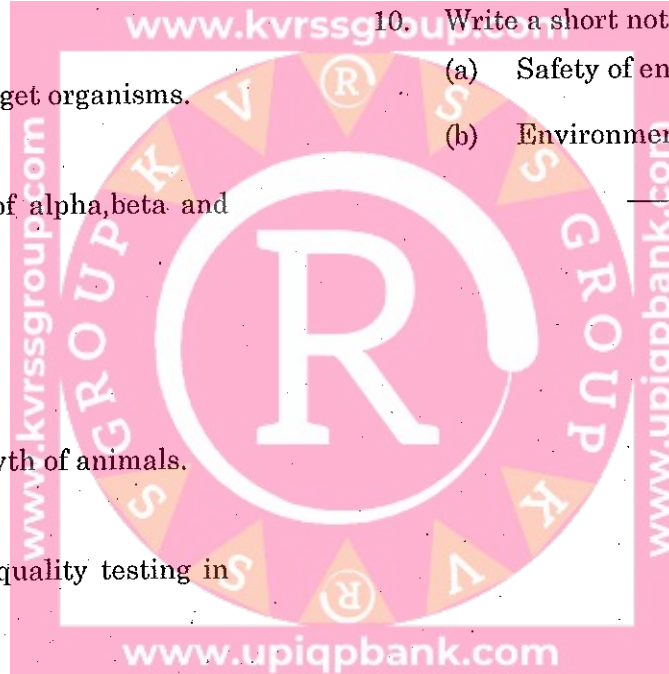
UNIT V

9. Explain the laws and Acts to control environmental pollution.

Or

10. Write a short note on:

- (a) Safety of environment.
- (b) Environmental Policy.



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UNIT III

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Paper II — AQUACULTURE MANAGEMENT

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ONE question from each Unit.

All questions carry equal marks.

UNIT I

1. Describe the concepts, principle and practices of organic aquaculture.

Or

2. Write short notes on :

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

UNIT II

3. Describe the design and construction of semi enclosed culture system of shrimps.

Or

4. Write short notes on :

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

5. Explain the techniques adopted for management of reservoir.

Or

6. Write short notes on :

- (a) Natural productivity
- (b) Fish pond management practices.

UNIT IV

7. How are the nutritional requirements of shrimp managed for optimum production?

Or

8. Write short notes on :

- (a) Supplementary feeds
- (b) Feed conversion ratio.

UNIT V

9. What are the principles of aquaculture economics, enumerate?

Or

10. Write short notes on :

- (a) Cost benefit analysis
- (b) Capital costs.

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UNIT III

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Paper III — AQUACULTURE

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

UNIT I

1. What are the important criteria for the practice of fish culture?
2. Write short notes on :
  - (a) Shrimp species suitable for culture
  - (b) Intensive fish culture.

UNIT II

3. Describe the important features of preparation and management of ponds for crab culture.
4. Write short notes on :
  - (a) Bundh breeding
  - (b) Giant fresh water prawn.

5. Write an account on brackish water fish culture.

6. Write short notes on :

- (a) Edible oyster culture
- (b) *Penaeus monodon*.

UNIT IV

7. Explain the economic importance of ornamental fish culture in India.

8. Write short notes on :

- (a) Mussel culture
- (b) Improvement of fish stock.

UNIT V

9. What is cryopreservation? Explain its importance to fish culture.

10. Write short notes on :

- (a) Transgenic fish
- (b) Gynogenesis.

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Paper IV – IMMUNOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE question choosing ONE from each Unit.

All questions carry equal marks.

UNIT I

1. Write an account on Cell Mediated Immunity

Or

2. Write short notes on :

(a) Humoral immunity

(b) Structure of Immunoglobulin

UNIT II

3. Explain the mechanism of immune response in humans.

Or

4. Write a short notes on :

- (a) Delayed type of hypersensitivity
- (b) MHC Class I

UNIT III

5. Describe the structure and functions of lymphoid organs.

Or

6. Write shorts on

- (a) Natural immune system in fish
- (b) Immunity in shrimps

UNIT IV

7. Describe the Hybridoma technology and its importance in antibody production.

Or

8. Write shorts on :

- (a) Immunoblotting
- (b) ELISA

UNIT V

9. What are immuno stimulants? Explain with examples their applications.

Or

10. Write short notes on

- (a) Vaccines, uses in fish farming
- (b) Immuno stimulants

