

(ZOO40112)

M.Sc. DEGREE EXAMINATION, APRIL 2017.

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 diagrams wherever necessary.

(5 × 14 = 70)

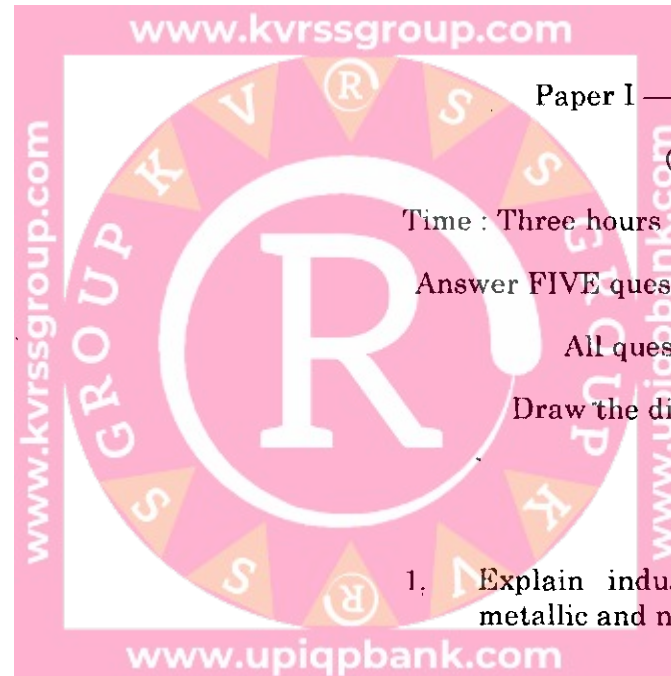
UNIT I

1. Explain industrial pollution with reference to metallic and non-metallic pollutants.

Or

2. Write short note on :

- (a) Management and conservation of aquatic resources.
- (b) Misuse of inland waters.



UNIT II

3. Discuss the effects of pesticides on non-target organism.

Or

4. Write a short note on :

- (a) Biomagnification
- (b) Pesticide classification.

UNIT III

5. What is thermal pollution? Describe the effects of thermal pollution on organism.

Or

6. Write a short note on :

- (a) Gamma rays and their effects
- (b) Nuclear fission experiments.

UNIT IV

7. Define sewage pollution. Give an account on composition and treatment of sewage pollution.

Or

8. Write a short note on :

- (a) BOD and COD
- (b) Bioindicators.

UNIT V

9. Discuss the impact of environment on socio economic and cultural aspects of society.

Or

10. Write a short note on :

- (a) Environmental planning
- (b) Laws and acts to control pollution.

(ZOO40212)

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Paper II — AQUACULTURE MANAGEMENT

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions choosing ONE from each Unit.

All questions carry equal marks.

(5 × 14 = 70)

Draw the diagrams wherever necessary.

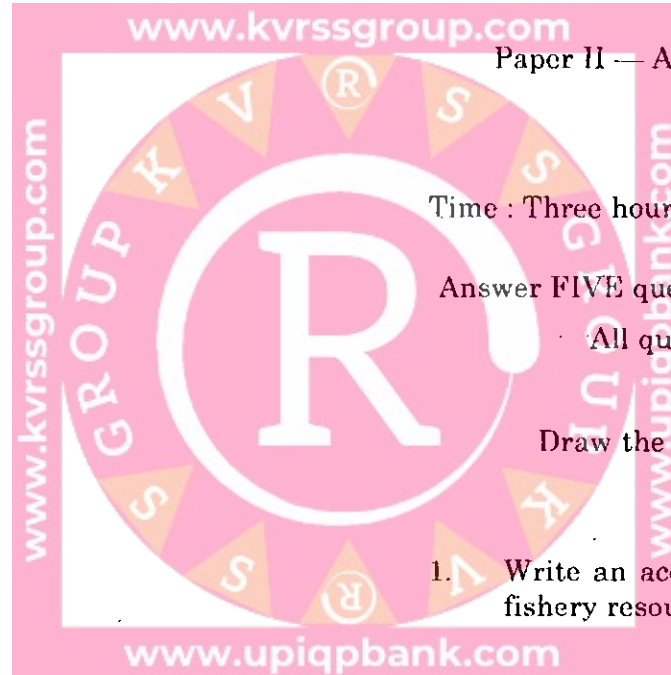
UNIT I

1. Write an account on the scope and importance of fishery resources in Andhra Pradesh.

Or

2. Write short notes on

- (a) Ecological characteristics of Lakes.
- (b) Biotic factors for fish life.



UNIT II

3. Describe the design and construction of enclosed culture system of fish.

Or

4. Write short notes on
(a) Cage culture
(b) Race ways.

UNIT III

5. What are the different biological means adopted for increasing fish production?

Or

6. Write short notes on
(a) Pond productivity
(b) Means for fish production.

UNIT IV

7. How are the nutritional requirements of fish managed for the maximum output in culture?

Or

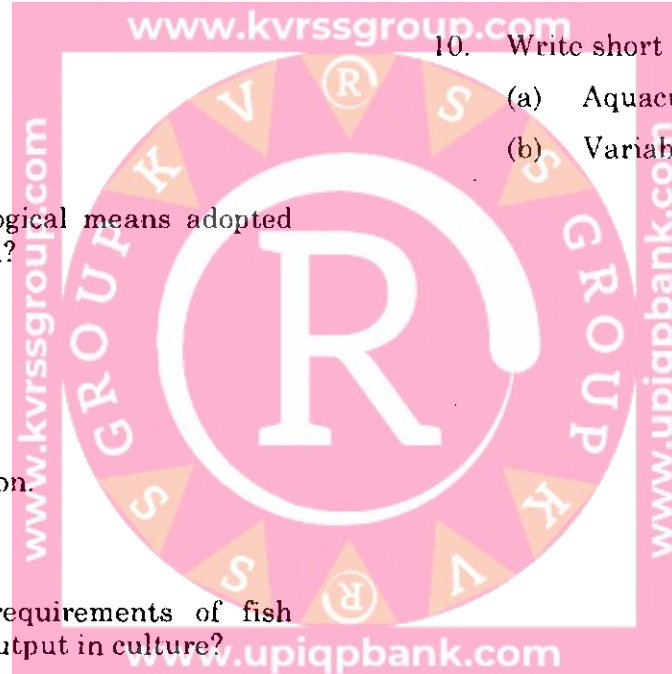
8. Write short notes on
(a) Feed Formulation
(b) Feed conversion efficiencies.

UNIT V

9. What are the important features of fish marketing?

Or

10. Write short notes on
(a) Aquaculture economics
(b) Variable costs.



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Paper III — AQUACULTURE

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions choosing one from each Unit.

All questions carry equal marks.

(5 × 14 = 70)

UNIT I

1. What are the major inland water bodies of Andhra Pradesh suitable for shrimp culture.

Or

2. Write short notes on
(a) Fish species suitable for culture
(b) Integrated fish farming

UNIT II

3. Discuss and differentiate the pond construction for Nursery, Rearing and Production.

Or

4. Write short notes on
(a) Induced breeding
(b) Asian cat fish culture.

UNIT III

5. Write an account on brackish water Shrimp culture.

Or

6. Write short notes on
(a) Sea weed culture
(b) Chanos chanos.

UNIT IV

7. Explain the importance of hybridization in improvement of fish in Indian perspective.

Or

8. Write short notes on
(a) Mari culture
(b) Ornamental fishes.

UNIT V

9. What is genetic engineering and how is it applied for the betterment of fish culture.

Or

10. Write short notes on
(a) GMO's impact
(b) Androgenesis.

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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.

(5 × 14 = 70)

UNIT I

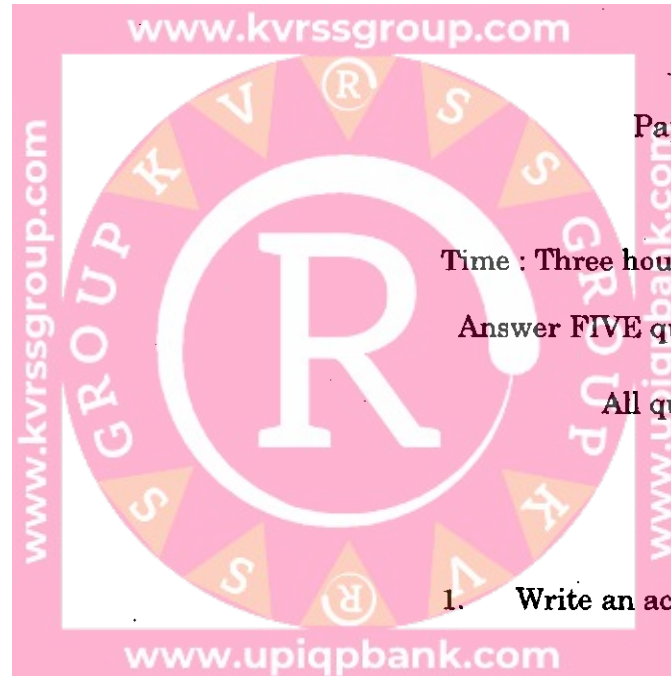
1. Write an account on Cell Mediated Immunity.

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 short notes 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 short notes 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.