

GOVERNMENT COLLEGE (A), RAJAMAHENDRAVARAM
M.Sc. Zoology III Semester (2024-25)
CORE-7: Population Ecology
Model Question Paper

Time: 3 Hours

Max Marks: 60M

Section-A

(4 × 10 = 40M)

Answer ALL questions.

1. Write an essay on the structure and function of ecosystems.

OR

2. Give a detailed account of productivity.

3. Write an essay on population regulation and its effects.

OR

4. Write about interspecific relationships.

5. Give a detailed account of the community concept.

OR

6. Write an essay on habitat and ecological niche. Add notes on sympatric and allopatric species.

7. Write about demography, life tables, and theories of aging. \

OR

8. Give a detailed account of fish population dynamics and fishery catches.

Section-B (4 × 5 = 20M)

Answer ANY FOUR of the following:

1. Food web.

2. Freshwater ecosystem.

3. Natality.

4. Territory.

5. Year classes.

6. Nitrogen cycle.

15. Allopatric species.

16. Greenhouse effect

CORE-8: General and Comparative Endocrinology

Time: 3 Hours

Max Marks: 60M

Section-A (4 × 10 = 40M)

Answer ALL questions.

1. Explain the discovery of hormones and their role as messengers.
OR
2. Give a detailed account of the hormones secreted by the pituitary gland along with its structure.
3. Describe the signal transduction mechanism.
OR
4. Write about the hormonal regulation of carbohydrate metabolism.
5. Write an essay on the classification of hormones.
OR
6. Explain the biosynthesis of steroid hormones.
7. Write about the role of the neuroendocrine system in crustacean reproduction.
OR
8. Give an account of pheromones and the role of hormones in induced breeding of fish.

Section-B (4 × 5 = 20M)

Answer ANY FOUR of the following:

9. Discovery of hormones (neurotransmitters).
10. Thyroid hormones.
11. Hormones of the adrenal cortex.
12. Peptide hormones.
13. Hormones in IVF.
14. Reproductive hormones.
15. Pineal Gland
16. post-translational modifications.

Model Question Paper
Paper-IV: CORE-9 MOLECULAR BIOLOGY

Time: 3 Hours

Max. Marks: 60

Section A (4x10 = 40 Marks)

1. Describe DNA replication in prokaryotes.
OR
2. List the various proteins and enzymes necessary for DNA replication.
3. Explain the mechanism of transcription in prokaryotes and eukaryotes.
OR
4. Write an essay on the export of RNA from the nucleus to the cytoplasm.
5. Give a detailed account of the genetic code.
OR
6. Write an essay on ribozyme technology and antisense molecules.
7. Write about the Holiday Junction.
OR
8. Describe genetic and physical mapping.

Section B (Answer Any Four) (4x5 = 20 Marks)

9. DNA Polymerases
10. Polycistronic mRNA
11. Types of RNA
12. Ambiguity in Genetic Code
13. FISH
14. DNA Fingerprinting
15. DNA Structure
16. mRNA

GOVERNMENT COLLEGE (A), RAJAMAHENDRAVARAM
M.Sc. ZOOLOGY
III SEMESTER
SEC-5: BIODIVERSITY AND ANIMAL CONSERVATION

Model Question Paper: Paper-III

Time: 3 Hours

Max. Marks: 60

Section-A

Answer ALL questions. All questions carry equal marks. (4 x 10 = 40 Marks)

1. Write about biodiversity at the national level.

(OR)

2. Describe biogeographic realms of the world.

3. Give a detailed account of hierarchical components of biodiversity with examples.

(OR)

4. Explain genetically modified organisms and their role in bioremediation.

5. Write an essay on IUCN classification of wildlife.

(OR)

6. Explain biodiversity threats, in-situ conservation, and ex-situ conservation.

7. Give a detailed account of wildlife protection acts.

(OR)

Explain Environmental Impact Assessment (EIA).

Section-B

Answer any FOUR of the following: 4 x 5 = 20 Marks)

9. Latitudinal gradients.

10. Hotspots in India.

11. Biodiversity values.

12. Wildlife corridors.

13. Restoration ecology.

14. Biological databases

15. Genetically modified organisms

15. Gene banks

GOVERNMENT COLLEGE (A) RAJAMAHENDRAVARAM
M.Sc. ZOOLOGY SEMESTER
Model Question: SEC-6 Aquaculture

Time: **3hours**

Max. Marks: 60M

Answer ALL questions.

All questions carry equal marks

Section-A

4X12=48M

1. Explain the criteria involved for the construction of fish farms
(OR)
2. Write about the preparation and management of different types of ponds in fish farms
3. What are the different fish seed resources? Add a note on their transportation

(OR)

4. Discuss about carp culture.
5. Discuss about fish nutrition

(OR)

6. Explain crab culture
7. Discuss about the shrimp hatchery construction and its management
(OR)
8. Explain the water quality management in brackish water farms

Section-B

Answer any **FOUR** of the following:

4X3=12M

9. Biological criteria for selection of aquaculture species
10. Integrated fish farming
11. Milk fish culture
12. Preparation and management of nursery ponds
13. Composite Fish Culture
14. Reclamation of swamps
15. Induced breeding.
16. Lobster culture.

4. Discuss about carp culture.
5. Discuss about fish nutrition
(OR)
6. Explain crab culture
7. Discuss about the shrimp hatchery construction and its management
(OR)
8. Explain the water quality management in brackish water farms

Section-B

Answer any **FOUR** of the following:

4X3=12M

9. Biological criteria for selection of aquaculture species
10. Integrated fish farming
11. Milk fish culture
12. Preparation and management of nursery ponds
13. Composite Fish Culture
14. Reclamation of swamps
15. Induced breeding.
16. Lobster culture.