

DHANAMANJURI UNIVERSITY

JUNE – 2021

Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-616
Paper Title : Genetics and Cytogenetics
Full Marks : 40

*The figures in the margin indicate full marks for the questions.
Answer all questions.*

1. What is complementation test? Show with a crossing how complementation test is to be done. 2+8=10

Or

What is epistasis? Explain by crossing of two parents with epistatic gene. 2+8=10
2. What is gene mapping? Discuss about the 3-point test cross in *Drosophila*. 2+8=10

Or

Describe tetrad analysis in *Neurospora*. 10
3. Define gene mutation. Explain the different type of gene mutation. 2+8=10

Or

Describe the p-element insertional mutagenesis in *Drosophila*. 10
4. Differentiate between euchromatin and heterochromatin. Draw and describe polytene chromosome. 4+6=10

Or

Write about the mechanism of sex determination in *Drosophila*. 10

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Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-617
Paper Title : Biostatistics, Computational Biology & Bioinformatics
Full Marks : 40

*The figures in the margin indicate full marks for the questions.
Answer all questions.*

1. Write the scope and application of statistics in biological sciences. 5+5=10
Or
Describe the advantages and methods of sampling and sampling errors. 10
2. Give an account of measures of central tendency. 10
Or
Give an account of Chi-square test and its utility. 10
3. What are the various input devices used in a computer? Discuss. 10
Or
Explain the various types of Operating Systems. 10
4. What is bioinformatics? Describe the applications and limitations of bioinformatics. 2+4+4=10
Or
Write short notes on (**any two**) 5 X 2 = 10
 - a) Construction methods of phylogenetic tree
 - b) Application of proteomics.
 - c) Genome databases.

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Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-624
Paper Title : Entomology III
(Agricultural Entomology, Bionomics and Pest Management)

Full Marks : 40

The figures in the margin indicate full marks for the questions.

Answer any four of the following questions:

10 X 4 = 40

1. Explain the common diseases of paddy and discuss the control measures. 10
2. Describe the different diseases of pea and suggest the measures to manage the diseases. 10
3. Write the important diseases of cotton plant and their managements in the field. 10
4. Give an account on the most common insect pests of potato and their management. 10
5. State the important diseases of tea and their management in tea garden. 10
6. Enumerate the methods to minimize the toxic effects of pesticides. 10
7. Discuss the legal and quarantine strategy in integrated pest management. 10
8. Write short notes on any **two** of the following: 5 x 2 = 10
 - a) Biological control
 - b) IPM
 - c) Pheromones.

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Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-625
Paper Title : Entomology - IV (Applied Entomology)
Full Marks : 40

*The figures in the margin indicate full marks for the questions.
Answer all questions.*

1. Give an account of the natural enemies of bees and their control measures. 10

Or

What is lac? Write an account of the natural enemies of lac insect and their management strategies. 2+8=10

2. What is conservation? What are the different strategies of conservation of natural enemies and their importance? 2+8=10

Or

What is mass production of natural enemies and its importance? Write an account of mass production of any two bio-control agents that you have come across for the bio-control programme of insect pests. 2+8=10

3. What is forensic entomology? Discuss the role of forensic entomology in criminal investigation. 2+8=10

Or

Enumerate the importance of insects as bio resources from the industrial point of view. 10

4. Write the biology and public health importance of tsetse fly along with its management measures. 10

Or

Write short notes on: 5 x 2 = 10

- a) warble fly
- b) cattle tick.

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Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-634
Paper Title : Fishery – III (Fish Biology)
Full Marks : 40

*The figures in the margin indicate full marks for the questions.
Answer all questions.*

1. Write brief accounts on induced breeding method by using hypophysation technique. 10
Or
Discuss briefly on bundh breeding technique in relation to fish reproduction. 10
2. Give detail accounts on fish migration with examples. 10
Or
Discuss the various modes of adaptation shown by the hill stream fishes. 10
3. Define cryopreservation. Give the salient principles of cryopreservation and discuss the advantages of cryopreservation by giving at least five points. 2+8=10
Or
What do you mean by transgenic fish? Discuss the merits and demerits of transgenic fish in fisheries. 2+8=10
4. Give accounts on any two methods of fish preservation 5+5=10
 - a) Freezing
 - b) Drying
 - c) Salting
 - d) CanningOr
Write brief accounts on Fish by-products. 10

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Name of Programme : M.Sc. Zoology
Semester : Fourth
Paper Code : ZOO-635
Paper Title : Fishery – IV (Capture Fisheries)
Full Marks : 40

*The figures in the margin indicate full marks for the questions.
Answer all questions.*

1. What is Inland Capture Fishery? Give the names of the various types of Inland Capture fisheries resources in India.
Describe about one of the Inland Capture Fishery resource in India. 2+2+6=10
Or
What is Cold Water Fishery? Give an account of Cold Water Fishery resources in North East India. 2+8=10
2. What is fish seed? Write one method each for collection and transport of fish seed. 2+4+4=10
Or
What is Hapa? Write an essay regarding Glass jar hatcheries. 2+8=10
3. What are the different types of fishing crafts and gears used in India? 5+5=10
Or
Describe about some of the modern Equipment's for fishing. 10
4. Give an account of the role and status of women in fisheries. 5+5=10
Or
What is domestic and export marketing of fish. Write about the different types of fish products. 2+8=10
