Zoology Syllabus B, sc 1st Year, (2nd Semester)

Paper- I: BIODIVERSITY & ECOLOGY - I (ZOO-201)

Max. Marks : 40

Theory Exam. : 36 marks

Internal Assessment : 4 marks

Time : 3 hours

Note: Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 mark each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In all, five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

UNIT -I

The detailed study of the following animal types:

Arthropoda: Periplaneata Social organizations in insects (honey bee and termite).

Classification up to orders with the brief ecological note and economic importance (if any) of the following:
Arthropoda : Apis, Lepisma (Silver Fish), Schistocerca (Locust), Poecilocerus (Ak Grasshopper), Gryllus (Cricket), Mantis (Preying Mantis), Cicada, Forficula (Earwig), Cimex, Scarabaeus (Dung beetle), Agrian (Dragonfly), Odontotermes (Termite queen), Cimex (bed bug), Cicindela (Tiger beetle), Polistes (Wasp), Bombyx (Silk moth).

UNIT –II

The detailed study of the following animal types:


Classification up to orders with a brief ecological note and economic importance (if any) of the following:
Peripatus, Prawn, Lobster, Cancer (Crab), Sacculina, Eupagurus (Hermit crab), Lepas, Balanus, Julus (Millipede), Scolopendra (Centipede), Palamnaeus (Scorpion), Aranea (Spider) and Limulus (King crab).
UNIT – III

Ecology: Subdivisions and Scope of ecology.
Ecosystem: Components, ecological energetics, food web, introduction to major ecosystems of the world.
Ecological factors: Temperature, light, and soil as ecological factors.

UNIT-IV

Nutrients: Biogeochemical cycles & concept of limiting factors.
Ecological: Morphological, physiological and behavioural adaptations in animals in different habitats.
Population: Characteristics and regulation of population.

Books Recommended:


Paper-II BIODIVERSITY & ECOLOGY - II (ZOO-202)

Max. Marks : 40

Theory Exam. : 36 marks

Internal Assessment : 4 marks

Time : 3 hours

Note: Nine questions are to be set. Question No.1 is compulsory consisting of short answer type questions covering the whole syllabus. It will have 8 parts of 1 mark each. Two questions are to be set from each Unit. One question is to be attempted from each Unit. In
all, five questions are to be attempted including compulsory one. 50% of the questions are to be split up into 2-4 sub-parts.

UNIT – I

A detailed study of the following animal type:
Mollusca: Pila
Classification up to orders with ecological notes and economic importance (if any)
Mollusca: Chiton, Anodonta, Mytilus, Ostrea, Cardium, Pholas, Solen (Razor Fish), Pecten, Haliotis, Patella, Aplysia, Doris, Limax, Loligo, Sepia, Octopus, Nautilus, and Dentalium

UNIT – II

The detailed study of the following animal types:
Classification up to orders with ecological notes and economic importance (if any)

UNIT – III

Inter and intra: Competition, predation, parasitism, commensalism, ammensalism ecological relationships & mutualism
Biotic community: Characteristics, ecological succession, ecological niche.

UNIT – IV

Natural resources: Renewable and nonrenewable natural resources and their conservations.
Environmental: Causes, impact and control of environmental pollution.
Degradation (Air, Water, Land, Noise)
Wildlife conservation: Basic concepts

Books Recommended:


PRACTICALS: Practical based on Theory Papers ZOO-201 & ZOO-202 (ZOO 152)

1. Classification up to orders with ecological notes and economic importance, if any, of the following animals:

Arthropoda: Peripatus, Palaemon, Lobster, Cancer (Crab), Sacculina, Eupagurus (Hermit crab), Lepas, Balanus, Apis, Lepisma (Silver Fish), Schistocerca (Locust), Poecilocerus (Ak Grasshopper), Gryllus (Cricket), Mantis (Praying Mantis), Cicada, Forficula (Earwig), Scarabaeus (Dung beetle), Agrian (Dragonfly), Odontotermes (Termite queen), Cicindela (Tiger beetle), Polistes (Wasp), Bombyx (Silk moth), Julus (Millipede), Scolopendra (Centipede), Palamnaeus (Scorpion), Aranea (Spider) and Limulus (King crab).

Mollusca:
Anodonta, Mytilus, Ostrea, Cardium, Pholas, Solen (Razorfish)
Pecten, Haliotis, Patella, Aplysia, Doris, Limax, Loligo, Sepia,
Octopus, Nautilus shell (Complete and T.S.), Chiton and Dentalium.

Echinodermata:
Asterias, Echinus, Ophiothrix, and Antedon Cucumaria

Hemichordata:
Balanoglossus.

2. Study of the following permanent stained preparations:
Trachea, mouthparts of Periplaneta Radula and osphradium of Pila. T.S. Starfish (Arm).

3. Demonstration of dissection of the following animals through video clippings/charts/models: Periplaneta: Digestive and nervous systems; mouthparts and trachea. Pila: Pallial complex, digestive and nervous systems, Radula.
4. Study of animal adaptations with the help of specimens, charts, and models.
5. Study of Zoogeographical regions and their fauna.
7. Study of different types of nests in birds.
8. Study & preparation of zoogeographical charts/maps.

Note: Candidates will be required to submit their original notebooks containing a record of their laboratory work (Drawing etc.) initialed and dated by their teachers at the time of practical examination.

Guidelines for the conduct of Practical Examination

Max. Marks : 20
Practical Exam. : 18 marks
Internal Assessment : 2 marks
Time : 3 hours

1. Draw a labeled diagram of any given system of an animal and explain it to the
examiner 2 marks Sketch and demonstrate it to the examiner.

2. Identify the slides (A-C) and give two important reasons for each identification. 3 marks

3. Identify and classify the specimens (D-G) up to orders. Write a short note on the habitat, 6 marks special features, feeding habit, and economic importance.

4. Identify the type of adaptation/type of nest/biotic components with a short note. 1 mark

5. Mark Zoogeographical region on the given physical map along with endemic fauna and 2 marks climate.

6. Viva voce 2 marks

7. Practical record, charts/maps and project report of excursion to a place of zoological interest 2 marks