

Question Pattern

Tribhuvan University

Bachelor Level (4 Yrs) Sc. & Tech.
Course Title: Entomology and Parasitology
Course No. : B. Sc. Zool. 401

Full Marks: 100

Pass Marks: 35

Year:

IV

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Illustrate your answers with suitable diagrams wherever necessary.

Group 'A'

Attempt any TWO questions only. (2×10=20)

1. Describe the basic structure of antennae of insects. Discuss their types.
2. Give an account of biological control of insect pests.
3. Write a note on prospects of apiculture in Nepal.

Group 'B'

Attempt any TWO questions only. (2×10=20)

4. Give an account of effects of parasites on hosts.
5. Give an account of measurement of morbidity and mortality.
6. Give an account on immunizing agents.

Group 'C'

Attempt any EIGHT questions only. (8×5=40)

7. Discuss physiology of digestion in insects.
8. Explain different methods of movement of gases within tracheal system in insects.
9. Discuss briefly about liquid formulation of pesticides.
10. Explain the life history and control measures of *Leptocorisa acuta*.
11. Write notes on diseases of silkworm.
12. What is a vector? Name some vector born diseases in Nepal and their control measures.
13. Briefly describe the local routes of drug administration.
14. Define epidemiology. Explain its uses.
15. Give the modes of transmission, pathogenicity and control measures of Leprosy.
16. Mention the causative agent, mode of infection, clinical features, diagnosis and prevention of leishmaniasis.

Group 'D'

17. Give very short answers of the following (any eight) (8×2.5=20)

- i. Importance of insects as pollinators of cultivated plants
- ii. Basis of insect classification
- iii. Sex pheromones
- iv. Goals of IPM
- v. Economic importance of Yarsa Gumba
- vi. Pharmacokinetics and pharmacodynamics.
- vii. Milk born diseases
- viii. Types of parasites
- ix. Root-knot nematode
- x. Epidemiology of Japanese encephalitis

Question Pattern

Tribhuvan University

Bachelor Level (4 Yrs) Sc. & Tech.
Course Title: Ecology and Fish & Fisheries
Course No. : B. Sc. Zool. 403

Full Marks: 100
Pass Marks: 35
Year: IV

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Illustrate your answers with suitable diagrams wherever necessary.

Group 'A'

Attempt any TWO questions only.

(2×10=20)

1. State and explain the Liebig's law of the minimum. Describe role of temperature on the distribution of biota.
2. What is gaseous cycle? Illustrate the Nitrogen cycle in an ecosystem.
3. Explain various methods used to estimate terrestrial animal population.

Group 'B'

Attempt any TWO questions only.

(2×10=20)

4. Give important identifying characters of order cypriniformes and discuss any one family of it (cypriniformes) with examples.
5. What are the characteristic features of hill streams? Enlist adaptive modifications shown by hill stream fishes.
6. Define post harvest technology. Discuss the principles and importance of fish preservation.

Group 'C'

Attempt any EIGHT questions only.

(8×5=40)

7. Describe the role of density independent factors in population regulation
8. What is ecological community? Describe biological characters of the community.
9. Describe the process of biological invasion.
10. Describe importance of watershed management approach in natural resource management.
11. Discuss the role of protected areas in the biodiversity conservation of Nepal.
12. What are the different types of accessory respiratory organs found in different fishes?
13. Write a note on different zonations of rivers with reference to fishes of Nepal.
14. Point out different threats to fish and fishery in Nepal.
15. Define Environment Impact Assessment (EIA) and give its significance in the conservation natural fish stock.
16. Give different criteria for the selection of fish species for culture.

Group 'D'

17. Give very short answers of the following (any eight)

(8×2.5=20)

- i. Ecological niche
- ii. Role of primary productivity in an ecosystem
- iii. Eutrophication and its important effects
- iv. Categories of IUCN Red list
- v. Role of captive breeding programs in conservation of threatened species
- vi. Electrofishing
- vii. Pond engineering
- viii. Biomolecular compounds
- ix. Argulosis
- x. Fish transportation

Tribhuvan University

Bachelor Level (4 Yrs) Sc. & Tech.
Course Title: Applied Biology
Course No. : B.Sc. Zool.405

Full Marks: 100
Pass Marks: 35
Year: IV

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Illustrate your answers with suitable diagrams wherever necessary.

Group 'A'

Attempt any TWO questions only.

(2×10=20)

1. What is biofertilizer? Discuss the role of earthworm in organic waste management.
2. Why do we rear queen? Describe the methods of queen rearing.
3. What is fermentation? Give an illustrated account of design and function of a fermenter.

Group 'B'

Attempt any TWO questions only.

(2×10=20)

4. What is microbial insecticide? Up to what extent is it useful in biocontrol of insect-pests?
5. What is bioremediation? In what ways is it a good tool for environmental clean up?
6. What is pulsed electric gel electrophoresis? Write in detail its working mechanism.

Group 'C'

Attempt any EIGHT questions only.

(8×5=40)

7. Describe the various steps involved in vermin-composting technique.
8. Write in brief about the politics of the beehive.
9. Describe in brief about the indigenous technology of wine making in Nepal.
10. Write about the mode of action of ryania in biocontrol of insect pests.
11. Describe the process of elimination of toxicants from human body.
12. Mention in brief the application of remote sensing.
13. Outline the major methods that are currently available for estimating economic values for aquatic ecosystem services.
14. Write in brief about organochlorine insecticides.
15. How are cosmetics harmful?
16. Describe the methods of detection of nucleic acids.

Group 'D'

17. Give very short answers of the following (any eight)

(8×2.5=20)

- i. Role of applied biology in human welfare.
- ii. Green energy.
- iii. Honey bees and human beings.
- iv. Microbial culture media.
- v. Amensalism.
- vi. Viral pesticides.
- vii. Acute toxicity.
- viii. Bioaccumulation.
- ix. Basic principle of sedimentation.
- x. Global positioning system

Question Pattern

B. Sc. 4th year Inter-disciplinary course

Tribhuvan University
Institute of Science and Technology

Bachelor Level (4 Yrs) Sc & Tech.
Course Title: Ethnobiology & Biodiversity Conservation
Course No. : B.Sc. Zool.407

Full Marks: 50
Pass Marks: 17.5
Year: IV

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks

Illustrate your answers with suitable diagrams wherever necessary.

Group A

Attempt any **Two** questions

2×10= 20

1. What do you mean by principles of ethnobiology and just make a list of all principles of ethnobiology?
2. Describe shortly the research design and field cum laboratory methods in ethnobiology
3. Discuss various applications of ethnobiology in human welfare.

Group B

Attempt any **Four** questions

4×6=24

4. Write a short note on the multiple disciplinary relationship of ethnobiology.
5. Define medico-ethnobiology and explain its sub-disciplines?
6. How indigenous knowledge system does differ from modern knowledge system?
7. What are intellectual property rights in ethnobiology? Mention briefly personal property rights vs. collective property rights.
8. Distinguish between conventional and molecular ethnobiology.

Group C

Give very short answers of any **Three**

3×2=6

9. a) Evolutionary history of ethnobiology.
b) Status and field of ethnobiology in Nepal.
c) Ethnobiology concerns and priorities.
d) Role of ethnic groups in biodiversity conservation.
e) Future directions and careers in ethnobiology.