

M.Sc. ZOOLOGY SEMESTER -IV

ZOL C401: ECOLOGY

Answer in short

1. What is Niche?
2. Define NPP.
3. What is Leibig's Law?
4. Who gives the term ecosystem?
5. What is Gause's Principle?
6. Write short note on coral reef.
7. What is Brood Parasitism?
8. Who introduce the term Oekologie?
9. What do you understand by Assimilation Efficiency?
10. What is RAMSAR conservation?

Long answer type questions :-

1. Describe basic structure of ecosystem .
2. Define population, write a brief account of its various characteristics .
3. Write notes on (any two):-
 - a. Population growth form
 - b. 'K' selection and 'r' selection
 - c. Survivorship curve
4. Give brief account of the following :-
 - A. Ecological pyramids
 - B. Ecological efficiency
 - C. Productivity of ecosystem
5. Explain the process of succession in detail with suitable example.
6. Write short note on:-
 - a. Leibig's law of minimum
 - b. Law of tolerance
7. Short note on :-
 - a. Difference between 1° and 2° succession
 - b. Synthetic characters of community
8. Describe in brief temperature and light as an environmental limiting factor.
9. Write an essay on Mangroves.
10. Define biogeochemical cycles. Draw Nitrogen cycle.

M.Sc. Zoology Semester-IV

ZOL C402: Ethology

Answer in short:

1. Name any four well known Ethologists.
2. Write full form of SS, FAP, ASE and IRM.
3. What is the difference between lesion and ablation.
4. Name any four animals which form social groups.
5. What is home range and territory.
6. Define altruism.
7. Define Ecolocation. Name any two animals which use this type of communication.
8. Trail hormone is released by which gland in ants.
9. Name any four animals which use urine to mark their territory.
10. What is tactile communication.

Answer in detail:

1. Write short notes on following:
(A) contribution of any two ethologists
(B) Flush toilet model
2. Give a detailed account on behavioural genetics.
3. Describe any two techniques to study brain and its behaviour.
4. Write short notes on following:
(A) Advantages of social groups (B) Territorial behaviour
5. Write a detailed account on SS and FAP.
6. Differentiate between ethologists and psychologists.

7. Describe various types of aggression.

8. Write short notes on the following :

(A) Chemical communication

(B) Courtship behaviour in animals

9. Explain parental care in animals.

10. Describe various sexual strategies in animals.

M.Sc. Zoology Semester IV
ZOL C403: Tools and Techniques

Answer in short-

1. Explain sedimentation coefficient
2. Differentiate between simple and compound microscope
3. Name any one anion exchanger
4. What is the importance of retention time in chromatography
5. Write the importance of fixation
6. Explain SDS and write its importance
7. Name any popular NMR technique used for medical diagnosis
8. What is Western Blotting
9. Write full form HPLC
10. Differentiate between colorimeter and spectrophotometer

Answer in Long -

1. What do you mean by microscopy .Explain compound microscope in detail.
2. Describe the principal and mechanism of micrometry .
3. Write short notes on :-
 - a. Affinity chromatography
 - b. Density gradient centrifugation
4. What is ion exchange chromatography .Describe the principal and mechanism .
5. Explain the principal and application of spectrophotometer .
6. Differentiate between flame emission spectroscopy and Atomic absorption spectroscopy .
7. Define fixation, stains and staining ? how do fixation and staining complement each others .
8. Write short notes on :-
 - a. Iso electric focusing
 - b. Pulse field electrophoresis
9. HPLC is very versatile and powerful analytic tool. Describe why?
10. Describe basic principle of flow-cytometry?

M.Sc. Zoology Semester IV
ZOL 4DO1: Environmental Biology
(Environmental Toxicology and Environmental Health)

Answer in short-

1. Define LD₅₀ value
2. Write the full form of MATC and MMFO
3. What is potentiation
4. Define effect and response
5. Explain green house effect
6. Explain COD
7. Name four chemical agents causing occupational hazards
8. Write the objectives of EIA
9. What are the components of EIA
10. Write the unit used in measuring noise level

Answer in long-

1. Describe various types of dose –response relationships .
2. Define biotransformation, explain the Phase –I and Phase II reactions of biotransformation .
3. Write short notes on :-
 - i. Characteristics of EIA
 - ii. Risk Assessment
4. What is EIA? Describe the procedure for obtaining EIA clearance .
5. Write short notes on :(any 2)
 - i. Trickling filters
 - ii. Anaerobic digesters
 - iii. Vermicomposting
 - iv. Biogas plant
6. Give a detailed account on liquid waste water treatment .
7. Discuss the toxic effects caused by food additives .
8. Discuss the occupational biological hazards .

M.Sc. Zoology Semester IV
ZOL 4DO3: Environmental Biology
(Environmental Education, Management and Regulation)

Answer in short:-

1. Write the full form of CPCB and IUCN .
2. What is the aim of Animal Welfare Board of India (AWBI).
3. When was the Environment Protection Act passed.
4. When and where the silent valley movement started.
5. Write the methods of teaching environmental education.
6. Write the name of main environmental movements in India.
7. When was Bombay Natural History Society (BNHS) established.
8. Write the name of Wild Life Institutes of India.
9. What is Narmada Bachao Aandolan.
10. What is Zoo Authority of Indian (ZAI) .

Answer in short:-

1. Explain environmental education along with its goals, objectives and principal
2. Describe the salient feature of The Water Prevention and Control of Pollution Act, 1974.
3. Write a note on humanity – environmental relationship
4. Write short note on :-
 - a. MOEF (Ministry of Environment and Forest)
 - b. WII (Wildlife Institute of India)
5. Give a brief account on environmental movements of Indian .
6. Briefly explain mitigation measures to be taken to prevent of environmental problems .
7. Describe Ramsar (wetland)sites in India and Ramsar Convention .
8. Write short note on National Biodiversity Authority (NBS) and Zoological Survey of India.
9. Explain Environment Protection Act 1986 .
10. Write down about Models for future environmental education system.

