

Reg. No. :

Name :

Third Semester M.Sc. Degree Examination, January 2023

Zoology

ZO 232 : ECOLOGY, ETHOLOGY AND BIODIVERSITY CONSERVATION

(2013 Admission onwards)

Time : 3 Hours

Max. Marks : 75

I. Answer **any ten** of the following. **Each** question carries **2** marks.

1. Explain the term standing crop.
2. What is energy efficiency?
3. What is the difference between primary and secondary ecological succession?
4. Define pulse stability.
5. Distinguish between habitat and ecological niche.
6. What is protocooperation?
7. What is imprinting?
8. What is stimulus filtering?
9. Comment on Disorders of Arousal.
10. What is Bio-geography?
11. What are the major causes of species losses in a geographical region?

P.T.O.



12. Write the importance of world conservation strategy.
13. Write the chief objectives of the Project Tiger programme.
14. What is Flagship Species?
15. What is Ramsar convention?

(10 × 2 = 20 Marks)

II. Answer **any six** of the following. **Each** question carries **4** marks.

16. Why is the number of trophic levels in an ecosystem limited?
17. Discuss the process of ecological succession.
18. Explain energy partitioning in food chains.
19. Explain co-evolution with examples.
20. Write a short account on cognitive ethology.
21. Differentiate sign stimulus and releaser.
22. Write short notes on characteristics of terrestrial ecosystem.
23. What are the risks associated with captive breeding?
24. Differentiate in-situ and ex-situ conservation methods of biodiversity conservation.
25. What is the importance of Brundtland Report (1987).

(6 × 4 = 24 Marks)

III. Answer **any three** of the following. **Each** question carries **7** marks.

26. What is the Food Chain? Explain the different types of food chains in the ecosystem.
27. Write an account on causes of succession.
28. Explain the brain function involved in memory.



29. Describe the various aspects of fish migration.
30. Discuss the role of keystone species in an ecosystem.

(3 × 7 = 21 Marks)

IV. Answer **any one** of the following. **Each** question carries **10** marks.

31. Give a brief account on genetics of biological rhythms.
32. Write short notes on any one of the following
- (a) Biodiversity hot spots
 - (b) Convention on biological diversity

(1 × 10 = 10 Marks)

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Zoology

ZO 233 : IMMUNOLOGY AND DEVELOPMENTAL BIOLOGY

(2013 Admission onwards)

Time : 3 Hours

Max. Marks : 75

I. Write a brief notes on **any ten** of the following each in a paragraph. **Each** question carries **2** marks.

1. Passive immunity.
2. Epitopes.
3. Precipitation.
4. Memory cells.
5. Xenograft.
6. Rheumatitis.
7. Lymph nodes.
8. Gonochorism.
9. Gap genes.
10. Totipotency.
11. Superovulation.

P.T.O.



12. Fertilizin.
13. Enucleation.
14. IP3.
15. GIFT.

(10 × 2 = 20 Marks)

II. Write a short notes on **any six** of the following. **Each** question carries **4** marks.

16. Differentiate humoral and cell mediated immunity.
17. Write on somatic hyper mutation.
18. Explain the mechanism involved in grafts retention and rejection.
19. Comment on clonal selection theory.
20. Explain the classical pathway in complement system.
21. Write the significance of parthenogenesis.
22. Outline the process of gastrulation of drosophila development.
23. Explain parthenogenesis.
24. Classify the stem cells.
25. Write notes on intra cytoplasmic sperm injection (ICSI).

(6 × 4 = 24 Marks)

III. Write short essays **not** exceeding two pages on **any three** of the following. **Each** question carries **7** marks.

26. Explain the secondary lymphoid organs with suitable diagram.
27. Give an account on techniques and application of hybridoma technology.
28. Classify the grafts with examples.



29. Explain the events in fertilization – Mention the significance of fertilization.
30. Explain a model animal success in mamalian cloning.

(3 × 7 = 21 Marks)

IV. Write an essay on **any one** of the following, not exceeding **four** pages. **Each** question carries **10** marks.

31. Describe the different types of immunoglobulins and their functions.
32. Discuss in detail the early development of Caenorhabditis elegans in reference to egg, cleavage and gastrulation

(1 × 10 = 10 Marks)

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Zoology

ZO 231 : MICROBIOLOGY AND BIOTECHNOLOGY

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

Write briefly on any **ten** of the following. Each question carries **2** marks.

1. Kochs' postulates
2. Extremophile
3. One step growth experiment
4. Phylum Chlorobi
5. Virusoids
6. Teichoic acid
7. Selective media
8. pBR322
9. Restriction endonucleases
10. N- acetylglucosamine

P.T.O.



11. Pasteurization
12. β -lactam antibiotics
13. Bio-weapons
14. Recombinant proteins
15. GMOs

(10 × 2 = 20 Marks)

SECTION – B

Write short notes on any **six** of the following. Each question carries **4** marks.

16. Write a short note on the mode of action of exotoxins
17. Describe the structure of protozoa
18. Elaborate Gram's staining mechanism
19. Explain the Continuous culture method of bacterial growth.
20. Discuss the organic acids production by bacteria
21. Discuss the role of microbes in N₂ cycle
22. Explain in brief on E. coli transformation
23. List out the characteristic features of 'Hybrid vectors'
24. Describe the importance of Electroporation in gene transfer
25. Discuss the role of biotechnology laboratory authorities in India

(6 × 4 = 24 Marks)



SECTION – C

Write short essays on any **three** of the following. Each question carries **7** marks.

26. Describe drug resistance with suitable examples.
27. Comment on the ethical and social issues of biotechnology.
28. List out the applications of genetic engineering in animal husbandry
29. Discuss the nutritional requirement of bacterial growth.
30. Discuss the molecular basis of transgenic plants production with suitable example.

(3 × 7 = 21 Marks)

SECTION – D

Write an essay on any **one** of the following. **Each** question carries **10** marks.

31. Write an essay on types of fermentation processes and their applications.
32. Describe the steps involved in cloning a gene and expression of a protein with suitable examples.

(1 × 10 = 10 Marks)

