

UG-AS-1447 BZOOS-11

**U.G. DEGREE EXAMINATION –
JULY, 2024.**

Zoology

First Semester

INVERTEBRATE ZOOLOGY – I

Time : 3 hours

Maximum marks : 70

SECTION A — ($3 \times 3 = 9$ marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Ciliary feeding
2. Spongocoel
3. Coralpolyp
4. Scolex
5. Pin worm

SECTION B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Give a note on principles of taxonomy.
7. Write an account on sponge spicules.
8. Draw the structure of *Obelia* colony.
9. List out the general characters of phylum Platyhelminthes.
10. Explain about the *Ascaris* female reproductive system.

SECTION C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Discuss about the life cycle of *Plasmodium*.
12. Draw and explain the canal system of sponges.
13. Elaborate on polymorphism in coelenterates.
14. Discuss in detail on life cycle in *Taenia solium*.

15. Explain various parasitic adaptations of Platyhelminthes.
 16. Formulate about the coral reef formation and conservation.
 17. Deduce on various nematode parasites and diseases.
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**U.G. DEGREE EXAMINATION —
JULY 2024.**

Botany

First Semester

PLANT DIVERSITY – I

Time : 3 hours

Maximum marks : 70

SECTION A — ($3 \times 3 = 9$ marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Algae
2. Coenobium
3. Saprophytes
4. Rhizoids
5. Usnea

SECTION B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Write notes on Economic importance of Algae.
7. Explain the life cycle of *Sargassum*.
8. Give an account on Economic importance of fungi.
9. Write an essay on *Anthoceros* structure and its reproduction.
10. Write notes on Ecological significance of Lichens.

SECTION C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Enumerate the life cycle of Algae with neat sketch.
12. Explain *Volvox* characteristics and its life cycle.
13. Write an essay on *Puccinia* alternate host life cycle mechanism.

14. Explain general classification of Reimers.
 15. Explain the economic importance of Fungi.
 16. Give an account of general characteristics of Bryophytes.
 17. Explain in detail about *Albugo* life cycle.
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**U.G. DEGREE EXAMINATION –
JULY 2024.**

Zoology

Second Semester

INVERTEBRATE ZOOLOGY – II

Time : 3 hours

Maximum marks : 70

SECTION A — ($3 \times 3 = 9$ marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Metamerism
2. Thelycum
3. Mysis larva
4. Filter feeder
5. Aristotle lantern

SECTION B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Brief note on evolutionary significance of trochophore larva.
7. Draw and explain the nervous system of prawn.
8. Give an account on mouthparts of insects.
9. List out the general characters of phylum Mollusca.
10. Illustrate the structure of starfish.

SECTION C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Explain in detail on vermiculture and its economic importance.
12. Classify phylum Arthropoda with its general characters.

13. Describe about crustacean larvae and its significance.
 14. Draw and explain the digestive system of freshwater mussel.
 15. Deduce on the water vascular system of starfish.
 16. Formulate a detailed account on *Peripatus* and its affinities.
 17. Elaborate about echinoderm larvae and its significance.
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U.G. DEGREE EXAMINATION — JULY 2024

Botany

Second Semester

PLANT DIVERSITY – II

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in
100 words.

All questions carry equal marks.

1. Fern
2. Horsetails
3. Conifers
4. *Pinus* needle
5. Fossil

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Explain the salient features of Pteridophytes.
7. Why Psilotum termed as living fossil give justification?
8. Give an account on general characteristics of Gymnosperms.
9. Describe the *Cycas* megasporophyll structure.
10. Write notes on fossil importance and its types.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Elaborate the life cycle of Pteridophytes with neat sketch.
12. Why Selaginella is known as resurrection plant? Explain.

13. Write an essay on general classification of Gymnosperms.
 14. Explain the life cycle of *Gnetum*.
 15. Explain the geological time scale types and its uses.
 16. Describe *Pinus* structure and general characteristics.
 17. Explain in detail about fossil and its applications.
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**U.G. DEGREE EXAMINATION –
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Zoology

Third Semester

VERTEBRATE ZOOLOGY – I

Time : 3 hours

Maximum marks : 70

SECTION A — ($3 \times 3 = 9$ marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Describe the pharyngeal gill-slits.
2. Comment on Tornaria larva.
3. Write the systematic position of Lamprey.
4. Comment on air bladder.
5. Give an account on moulting in Amphibia.

SECTION B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Explain the Garstang's theory on chordate origin with examples.
7. Describe the reproductive system of Balanoglossus.
8. Discuss the external features and circulatory system of Petromyzon.
9. Write the systematic position and external features of Scoliodon.
10. Explain the significant adaptive features of Anura.

SECTION C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Write the general classification of Agnatha up to order level with examples.
12. Explain the general characters and affinities of Urochordata.

13. Discuss the general characters and affinities of Cyclostomata.
 14. Describe the affinities of Dipnoi with fishes and Elasmobranchii.
 15. Discuss the complete endoskeleton structure of frog with neat diagrams.
 16. Explain the origin and types of scales and fins in fishes.
 17. Discuss the parental care strategies of Amphibia with significance.
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**U.G. DEGREE EXAMINATION —
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Zoology

Fourth semester

VERTEBRATE ZOOLOGY – II

Time : 3 hours

Maximum marks : 70

PART A — (3× 3 = 9 marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Comment on embryonic membranes of Reptilia.
2. Explain the major events of Mesozoic era.
3. Comment on Quill feathers.
4. Explain the coprophagy behavior of Rabbit
5. Write the dental formula of human.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Write the classification and important characteristics of Subclass Ichthyoptergia.
7. Give an account on common poisonous snakes of India.
8. Write the general characteristics of aves and mentions the systematic position of Pigeon.
9. Explain the important features of Order Cetacea with example.
10. Give an account on marsupials with suitable examples.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Give a detailed account on digestive system and physiology of digestion in Garden lizard.
12. Discuss the characteristic features and classification of reptilian Skull.

13. Describe the muscular and axial skeleton of pigeon.
 14. Explain the structure and functions of Rabbit brain.
 15. Write a detailed note on adaptive radiation in mammals with examples.
 16. Explain the morphological and anatomical adaptations found in birds.
 17. Give an account on aquatic mammals and list out their adaptations.
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U.G. DEGREE EXAMINATION –
JULY, 2024.

Zoology

Fifth Semester

CELL BIOLOGY

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions

1. What is called plasmodesmata?
2. Explain the chemical composition of mitochondria.
3. Discuss about the functions of golgi complex.
4. Write about the polytene chromosome.
5. Define the regulation of cell cycle.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions

6. Write short note on characteristics of viruses.
7. Explain the Pasteur's effects.

8. What are the general morphology of golgi complex.
9. Write a note on structure of nucleus.
10. Give an account on heterochromatin.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions

11. Write an essay on prokaryotic and eukaryotic cells.
12. Give a detailed account on origin of mitochondria.
13. Write about the chemistry and enzymes of lysosomes.
14. Describe the structure and functions of nucleus.
15. Analyze the polymorphism in lysosomes.
16. Elaborate notes on theories of cancer.
17. Write about causes, diagnosis and treatment of cancer.

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U.G. DEGREE EXAMINATION –
JULY, 2024.

Zoology

Fifth Semester

GENETICS AND EVOLUTION

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions

1. Explain Dihybrid experiment Mendel's laws.
2. Discuss the factors affecting crossing over.
3. Define the shell coiling in snail.
4. Write about the gene frequency.
5. What is speciation.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions

6. Enumerate the multiple alleles.
7. Write short note on sex linkage in *Drosophila*.

8. Explain the regulation gene in Lac Operaon model.
9. Give an account on factors affecting gene frequency.
10. Describe the modern concept of natural selection in variation and isolation.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions

11. Describe the Mendelian inheritance with examples.
 12. Write an essay on evidences of crossing over.
 13. Give a detailed account on sex linkage in Drosophila.
 14. Write about the Non - disjunction.
 15. Describe the recon and muton.
 16. Explain the Hardy Weinberg Law.
 17. Describe the modern synthetic theory of evolution.
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**U.G. DEGREE EXAMINATION –
JULY, 2024.**

Zoology

Fifth Semester

**DEVELOPMENT BIOLOGY AND
BIOTECHNOLOGY**

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions

1. Define the sertoli cells.
2. Write note on morula.
3. Mention the corpus luteum.
4. Comment on replication of DNA.
5. What is nutrient medium.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions

6. Give detail about acrosome reaction.
7. Summerize the development of brain in frog.

8. Explain the phases of menstrual cycle.
9. Write short on gene libraries.
10. Analyse the causes of cytotoxicity.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions

11. Discuss on polarity and symmetry of eggs with suitable examples.
 12. Explain the development of eye in frog.
 13. Write an essay on artificial insemination technology.
 14. What are the principles of bioethics? Explain in details.
 15. Write in detail about the aims of family welfare.
 16. Elaborate on examples of transgenic animals.
 17. Describe the methods of cell viability test commonly used in laboratories.
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**U.G. DEGREE EXAMINATION –
JULY, 2024.**

Fifth Semester

Zoology

AQUACULTURE

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions

1. Give the scope of aquaculture.
2. Define intensive fish culture.
3. Explain the pearl formation.
4. What is gill rot disease?
5. Analyse the export fish marketing.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions

6. Explain the over exploitation of wild fish stocks.
7. Define the monosex culture.

8. Write short note on requirements for an aquarium.
9. Discuss the types of fish feed.
10. Give an account on fish freezing.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions

11. Write an account on basic fish farm design.
 12. Describe the integrated fish farming.
 13. Elaborately explain the problems in penaeid shrimp culture.
 14. Describe the importance and composition of fish feed.
 15. Explain the harvesting and transport of fishes.
 16. Give an account on fungal diseases of fish.
 17. Briefly outline the advantage of monoculture.
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**U.G. DEGREE EXAMINATION –
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Zoology

Sixth Semester

ANIMAL PHYSIOLOGY

Time : 3 hours

Maximum marks : 70

SECTION A — (3 × 3 = 9 marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. State the main contractile proteins involved in muscle contraction.
2. Mention photoreceptors and name the two main types found in the mammalian eye
3. Describe the role of juvenile hormone (JH) in insect development and reproduction.
4. Define halophytic nutrition.
5. What is breathing?

SECTION B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Explain the importance of urea cycle in nitrogen metabolism. How does the urea cycle facilitate the removal of excess nitrogen from the body?
7. Illustrate the transport of CO_2 from the tissues to the lungs.
8. Compare and contrast skeletal, smooth, and cardiac muscle tissues.
9. Describe the structure of a rod cell and its function in vision.
10. Elucidate the regulation of thyroid hormone production and secretion by the hypothalamus-pituitary-thyroid axis.

SECTION C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Illustrate the glycolysis pathway in detail highlighting the key steps and the enzymes involved.

12. Classify vitamins. Distinguish between water soluble and fat soluble vitamins providing examples and their key functions.
 13. Narrate the composition of blood and its functions.
 14. Describe in detail the mechanism of urine formation, including ultrafiltration, reabsorption, secretion, and concentration.
 15. Explain the mechanism of synaptic transmission in chemical synapses.
 16. Elaborate on the anatomical structure of the organ of Corti, including its cellular components and their arrangement.
 17. Discuss the differences in sex hormone production and function between male and female insects.
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U.G. DEGREE EXAMINATION — JULY 2024

Zoology

Sixth Semester

ENVIRONMENTAL BIOLOGY AND BIOCHEMISTRY

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

**Answer any THREE questions out of Five questions in
100 words.**

All questions carry equal marks.

1. Explain the term “niche differentiation” in the context of interspecific competition.
2. State the importance of wildlife sanctuaries.
3. Name two key principles of environmental ethics.
4. Differentiate between saturated and unsaturated fats.
5. What is the role of enzymes in biological systems?

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks.

6. Explain the carbon cycle and its importance to living organisms.
7. Elucidate the significance of renewable resources in sustainable development.
8. How does the depletion of non-renewable resources affect the economy?
9. Classify lipids based on their chemical structure.
10. Describe the induced fit model of enzyme action with suitable examples.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Illustrate and explain the phosphorus cycle, including its biotic and abiotic components and its significance to living organisms.
12. Analyse the effects of abiotic factors on both intraspecific and interspecific competition, providing detailed examples.

13. Discuss the various strategies involved in wildlife management and preservation in sanctuaries.
 14. Evaluate the long-term consequences of depleting natural resources on global ecosystems.
 15. Assess the role of policy and legislation in mitigating the effects of deforestation and urbanization.
 16. Analyze the structural characteristics of globular and fibrous proteins and their impact on function.
 17. Compare and contrast the Michaelis-Menten kinetics and Lineweaver-Burk plots as tools for enzyme analysis.
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**U.G. DEGREE EXAMINATION —
JULY 2024.**

Sixth Semester

IMMUNOLOGY AND MICROBIOLOGY

Time : 3 hours

Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any **THREE** questions out of Five questions in
100 words.

All questions carry equal marks.

1. Antigen
2. Immunoglobulin
3. Beneficial Microbe
4. Streaking Technique
5. Type1 Polio

PART B — (3 × 7 = 21 marks)

Answer any **THREE** questions out of Five questions in
200 words.

All questions carry equal marks.

6. Describe graft rejection.
7. Explain immuno deficiency AIDS

8. Draw the ultra structure of fungi
9. Describe Bacterial culture techniques.
10. Write a short note on Causative agents, mode of transmission, control, prevention and treatment of cholera.

PART C — (4× 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Give an detailed account on pathway of Hypersensitivity.
12. Give an detailed account on Immunoprophylaxis
13. Draw and discuss the Classification of microbes.
14. Explain the nutritional requirement for growth bacteria and growth curve.
15. Describe the Causative agents, mode of transmission, control, prevention and treatment of Cholera.
16. Describe ELISA and immunohistochemistry.
17. Explain the role and importance of Lymphoid organs and immune system and their role of cell in immune response.

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U.G. DEGREE EXAMINATION – JULY, 2024.

Sixth Semester

ECONOMIC ZOOLOGY

Time : 3 hours

Maximum marks : 70

PART A — ($3 \times 3 = 9$ marks)

Answer any THREE questions out of Five questions in
100 words.

All questions carry equal marks.

1. Beneficial insects vectors.
2. Polyculture.
3. Development of Apiary in India honey bee.
4. Cocoon.
5. Poultry.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks.

6. Describe Pests of sugar cane *Pyrilla perpusilla*.
7. Explain Pearl culture.
8. Draw Products and its uses of honey bees.
9. Describe harvesting and processing of cocoon.
10. Write a short note on breeds in poultry.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Give an detailed account on Pests of Oil seed (*Achaea janata*).
12. Write detailed account on Culture of prawn.
13. Discuss the Types of honey bees.
14. Write a detailed account on modern methods of apiary management in Apiculture.

15. Explain the Diseases of silkworms of *Bombyx mori* and control measures.
 16. Describe the poultry Disease management.
 17. Write an essay on reeling and extraction of silk.
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