

M.Sc. (Final) DEGREE EXAMINATION, DECEMBER 2008.

Second Year

Zoology

Paper V — ANIMAL PHYSIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

1. (a) What are enzymes and write their role in digestion.
Or
(b) Write short notes :
 - (i) Minerals
 - (ii) Lipid metabolism.
2. (a) Describe the role of respiratory pigments in transport of gases.
Or
(b) Write short notes :
 - (i) Comparative account of circulatory system.
 - (ii) Physiology of heart.
3. (a) Write the comparative account of nervous system.
Or
(b) Write short notes :
 - (i) Hibernation
 - (ii) Chemo receptors.
4. (a) Describe the ultra filtration in kidney.
Or
(b) Write short notes :
 - (i) Urine formation
 - (ii) Osmatic regulation.
5. (a) Describe the role of hormones in intercellular communications.
Or
(b) Write short notes :
 - (i) Muscular system
 - (ii) Hormones.

Second Year
Zoology
Paper VI — AQUACULTURE

Time : Three hours

Maximum : 100 marks

All questions are compulsory

Each question carries 20 marks.

6. (a) Describe the criteria adopted for the selection of a species for culture.

Or

- (b) Write notes on :
- (i) Induced breeding
 - (ii) Significance of aquaculture.

7. (a) Describe the design and construction of a pond farm.

Or

- (b) Write notes on :
- (i) Culture of common Carp
 - (ii) Nursery ponds.

8. (a) Give an account on culture of air breathing fishes.

Or

- (b) Write notes on :
- (i) Culture of milk fish.
 - (ii) Economic importance of tiger prawn culture.

9. (a) Give the details of pearl oyster culture.

Or

- (b) Write notes on :
- (i) Sea weeds
 - (ii) Edible oysters.

10. (a) Describe the Gynogenesis and Androgenesis.

Or

- (b) Write notes on :
- (i) Hybridization of fish.
 - (ii) Fish diseases.

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Zoology
Paper VI — AQUACULTURE

Time : Three hours

Maximum : 100 marks

All questions are compulsory
Each question carries 20 marks.

11. (a) Describe the criteria adopted for the selection of a species for culture.

Or

(b) Write notes on :

- (i) Induced breeding
- (ii) Significance of aquaculture.

12. (a) Describe the design and construction of a pond farm.

Or

(b) Write notes on :

- (i) Culture of common Carp
- (ii) Nursery ponds.

13. (a) Give an account on culture of air breathing fishes.

Or

(b) Write notes on :

- (i) Culture of milk fish.
- (ii) Economic importance of tiger prawn culture.

14. (a) Give the details of pearl oyster culture.

Or

(b) Write notes on :

- (i) Sea weeds
- (ii) Edible oysters.

15. (a) Describe the Gynogenesis and Androgenesis.

Or

(b) Write notes on :

- (i) Hybridization of fish.
- (ii) Fish diseases.

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Paper VII — PARASITOLOGY AND IMMUNOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Each question carries equal marks.

Draw the diagrams wherever necessary.

16. (a) What are various types of animal associations? Explain in detail the ecology of parasitism.

Or

(b) Write short notes on :

(i) *Balantidium coli*.

(ii) *Entamoeba histolytica*.

17. (a) Give an account of life cycle and portal entry of *Schistosoma mansoni*.

Or

(b) Write short notes on :

(i) Portal entry of *Diphyllobothrium* and its ill effects.

(ii) Life cycle of *Opisthorchis sinensis*.

18. (a) Explain in detail the biology, life cycle and nature of infection of *Dracunculus*.

Or

(b) Write short notes on :

(i) Infection of *Wucheraria bancrofti*

(ii) Life cycle of *Anchylostoma duodenale*.

19. (a) Give an account of acquired immunity with suitable examples.

Or

(b) Write short notes on :

(i) Structure and major classes of antigens

(ii) Natural immunity.

20. (a) What are antibodies? Explain their structure and properties.

Or

(b) Write short notes on :

(i) Antigen-Antibody interactions.

(ii) The cells of immune system.

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Paper VIII — BIOTECHNOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

All questions carry equal marks.

21. (a) Describe the historical aspects regarding the emergence of biotechnology and its scope and relevance to Indian Economy.

Or

(b) Describe the importance of microbial biotechnology and its applications to drug and pharmaceutical industry.

22. (a) What is a vector? Describe the importance of cloning vectors in recombinant DNA technology illustrating two examples.

Or

(b) Define restriction enzyme. Describe various restriction enzymes and their use in gene cloning.

23. (a) Write in detail the protocols for the preparation of and sterilization of media in plant biotechnology.

Or

(b) What is cell culture technique? Write in detail the procedures adopted for the maintenance of cultures in plant biotechnology.

24. (a) Write in detail and discuss the application of molecular genetics in animals.

Or

(b) Describe the animal cell culture and media required. What are the precautions to be taken in the animal cell culture techniques?

25. (a) Describe the detailed procedure in the production of Alcohol.

Or

(b) What are antibiotics? Describe in detail the production of antibiotics using Genetic Engineering Methods.
