



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**

**Question Paper**

**B.Sc. Honours Examinations 2021**

(Under CBCS Pattern)

**Semester - V**

**Subject: ZOOLOGY**

**Paper : DSE 1-T & P**

**Full Marks : 60 (Theory-40 + Practical-20)**

**Time : 3 Hours**

*Candidates are required to give their answers in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

**Animal Behaviour and Chronobiology**

**[Theory]**

**Group-A**

- A.** Answer any **three** questions from the following : 12×3=36
1. Define Altruism. What are the types of social interaction? Describe the purpose and advantages of the waggle dance with diagram. 2+4+6
  2. Elaborate the proximate and ultimate causes of behaviour. Describe pavlovian conditioning. 6+6

3. Distinguish between : 4+4+4
- (a) Habituation and Imprinting
  - (b) Innate and Learned Behaviour
  - (c) Role of Melatonin on seasonal breeders.
4. What are basic characteristics of stereotype response and Kin selection. Describe Tidal and Lunar rhythms. 4+4+4
5. (a) What is Chronobiology?
- (b) Describe the types and characteristic of biological rhythms.
  - (c) Write down in brief profile of Konrad Zacharias Lorenz and Nikolaas Tinbergen. 3+5+4
6. Write down the mechanisms of Mate choice and sexual selection according to Darwin. Why do female preferences exist in the first place? 6+6

**Group-B**

- B.** Answer any **two** questions from the following : 2×2=4
- 1. What is the concept of Average?
  - 2. Define Game theory.
  - 3. Give examples of Reflex.
  - 4. What is inclusive fitness?

**[Practical]**

**Group - A**

- A.** Answer any **one** question from the following : 15×1=15
- 1. Describe principle and procedure of studying geotaxis behaviour in earthworm. 10+5
  - 2. Write down the Age- and Wavelength-Dependency of Drosophila Larval Phototaxis and Behavioral Responses to Natural Lighting Conditions. 15

3. Elaborate the effect of light and temperature on human circadian physiology.

(7½+7½)

**Group - B**

**B.** Answer any **one** question from the following :

5×1=5

1. Briefly describe the nesting habits of birds.

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2. Write down the significance of submission of Laboratory Note Book and viva voce in the subject Animal Behaviour and Chronobiology.

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Vidyasagar University

*Or*

## **Fish and Fisheries**

### **Group-A**

- A. Answer any **three** questions from the followings : 12×3=36
1. (a) Write down the feeding habit and habitat of fish
  - (b) Describe the classification of fish up to subclasses. 6+6
  2. (a) Write down the application of remote sensing and GIS in fisheries.
  - (b) Describe the different types of fins of fish. 6+6
  3. (a) Write down the effects of climate change on fish catches in the Bay of Bengal.
  - (b) Write down the different kinds of fisheries law and regulation. 6+6
  4. (a) What are the different causes of fishery depletion?
  - (b) Write short notes on :
    - (i) Bioluminescence.
    - (ii) Ganoid Scales.
  - (c) What is over fishing? 4+3+3+2
  5. (a) Describe in brief the extensive and intensive fish culture.
  - (b) Write the differences between Pen and Cage culture.
  - (c) What is sustainable aquaculture. 6+4+2
  6. (a) Write the roles of DO (Dissolved Oxygen) and temperature in the culture of fishes.
  - (b) What is Vibriosis disease?
  - (c) Why induced breeding is necessary for fish culture? 6+2+4

### **Group-B**

- B. Answer any **two** questions from the following : 2×2=4
1. What is polyculture?
  2. What is transgenic fish? Give example.

3. What are fishing crafts and gears?
4. What are the basic differences between Placoid and Ctenoid Scales.

**[Practical : Marks : 20]**

**Group - A**

- A.** Answer any **one** question from the following : 15×1=15
1. Describe morphometric and meristic characteristics of Chimaera, Anabas and Labeo. 15
  2. State the distinctive features of Ctenoid, Placoid and Cycloid scales. 15
  3. Draw and describe different accessory respiratory organ of fishes. 15

**Group - B**

- B.** Answer any **one** question from the following : 5×1=5
1. State the ecological impact of pH 5
  2. Discuss specific characteristics of Myxine and Hippocampus 5
  3. Enlist different types of craft operated in inland and marine fishing. 5
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*Or*

## **Reproductive Biology**

### **Group-A**

- A.** Answer any **three** questions from the following : 12×3=36
1. What is steroid hormones? Write its mode of action. Write the regulation of gonadotrophin secretion in male. Write the development and differentiation of gonads. 4+4+4
  2. Describe the histoarchitecture of testis. What is spermatogenesis and describe its hormonal regulation. What is the difference between spermatogenesis and oogenesis? 4+4+4
  3. What hormones affect ovaries? What are the first signs of implantation? which hormone is responsible for implantation? What is the role of estrogen in implantation? 2+2+2+6
  4. What is the role of hormones during pregnancy? Describe the mechanism of parturition and its hormonal regulation. Write down the hormonal regulation of lactation? 4+4+4
  5. What are the main causes of infertility in male and female? Write a short note on sex selection. Write down the modern contraceptive technology. 4+4+4
  6. Describe the different hormones secreted from the pituitary gland. Write down the androgen synthesis and its metabolism. What is frozen embryo? What are the accessory glands of the male reproductive system? 4+4+2+2

### **Group-B**

- B.** Answer any **two** questions from the following : 2×2=4
1. What is the primary role of Sertoli cells?
  2. Write the difference between Spermatogenesis and Oogenesis.
  3. Compare between pregnancy and parturition.
  4. Write down the different names of placental hormones.

**[Practical : Marks : 20]**

**Group - A**

**A.** Answer any **one** question from the following : 15×1=15

1. Draw transverse section of Testis and ovary and write the characteristic features. 7½+7½
2. Write the steps for the preparation of permanent histological slide.
3. Write briefly the methods to set up and maintenance of animal house.

**Group - B**

**B.** Answer any **one** question from the following : 5×1=5

1. How can you examine the vaginal smear of rat.
  2. Write the proliferative and secretory stages of uterus.
  3. Laboratory note book and viva voce 2+3
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