

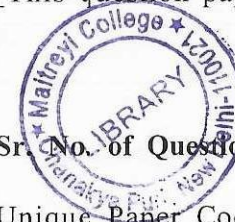
4495

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4. (a) Classify and explain various form of orientation with suitable example. (6)
- (b) What is filial imprinting? Discuss the role of imprinting in social development of mammals. (6)
5. (a) Give a detailed account of photoperiodic regulation of seasonal reproduction in vertebrates. (6)
- (b) With the help of suitable diagram, discuss the various components of biological oscillators. (6)
6. (a) Explain the adaptive significance of biological clock. (6)
- (b) What are the basic characteristics of biological rhythm? Also state the various types of biological rhythms with suitable examples. (6)
7. Write short notes on any **three** of the following :
- (a) Chronotherapy
- (b) Male-male rivalry
- (c) Fisher's runaway theory
- (d) Supernormal stimuli (4×3=12)

(1000)

[This question paper contains 4 printed pages.]



03.01.24(M)  
Your Roll No.....

Sr. No. of Question Paper : 4495

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Unique Paper Code : 32237901

Name of the Paper : DSE – Animal Behaviour and Chronobiology

Name of the Course : B.Sc. (H) Zoology (LOCF)

Semester : V

Duration : 3 Hours

Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Five** questions in all including Question No. 1 which is compulsory.

1. (a) Define the following :

(i) Sign stimulus

(ii) Polymorphism

(iii) Siblicide

(iv) Actograms

(v) Zeitgeber

(2×5=10)

P.T.O.

(b) Differentiate between the following :

- (i) Intersexual and Intrasexual selection
- (ii) Master clock and Slave clock
- (iii) Daily rhythms and Free-running rhythms
- (iv) Focal sampling and scan sampling  
(2×4=8)

(c) Match the following :

- |                       |                                 |
|-----------------------|---------------------------------|
| (i) R. A. Fisher      | Imprinting                      |
| (ii) Oscar Heinroth   | Sexual selection                |
| (iii) E. L. Thorndike | Reciprocal altruism             |
| (iv) Robert Trivers   | Circadian rhythm                |
| (v) Franz Halberg     | Operant conditioning<br>(1×5=5) |

(d) Fill in the blanks/ True-False : (1×4=4)

- (i) Infanticide is caused by Intra-sexual selection.

- (ii) Species exhibiting altruism are relatively more likely to discriminate against outsiders (non relatives).
- (iii) Melatonin secretion is often used as a marker of the body clock.
- (iv) In Orthokinesis, relationship exists between the rate of change of direction (turning) and intensity of stimulus.
- (v) King Solomon's Ring (book) was written by Konrad Lorenz.

2. (a) Describe foraging in honey bee and comment upon the advantages of waggle dance. (6)
- (b) Discuss various methods of studying and recording animal behaviour. (6)
3. (a) What is associative learning? Explain Pavlov's classical experiments with dogs involving conditioned reflex. (6)
- (b) Explain the correlation between sign stimulus, innate releasing mechanism and fixed action pattern. (6)