

2018

ZOOLOGY

( Major )

Paper : 6.1

( Animal Behaviour )

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Fill in the blanks (any four) : 1×4=4

- (i) \_\_\_\_ is known as founder father of Ethology.
- (ii) Endogenous rhythm of 24 hours is called \_\_\_\_.
- (iii) \_\_\_\_ hormone is commonly known as decision-making hormone or political hormone.
- (iv) The rapid autonomic response to a simple stimulus is called \_\_\_\_ behaviour.
- (v) \_\_\_\_ is the chief constituent of Queen Substance released by the Queen honeybee to regulate coordination among the individuals of the colony.



( 2 )

(b) Choose the correct answer (any *three*) :  
 $1 \times 3 = 3$

(i) The most important property of an Organized Society is

- (1) aggregation
- (2) association
- (3) division of labour
- (4) niche sharing

(ii) To indicate the source of food near the hive the scout bee performs

- (1) circular dance
- (2) tail waggle dance
- (3) fanning dance
- (4) foraging dance

(iii) For emergency escape from predators the social animals produce

- (1) howling calls (2) courtship calls
- (3) alarm calls (4) whistling calls

(iv) Nasute individual is found in the social organization of

- (1) honeybee (2) monkey
- (3) black ant (4) termite

2. (a) With suitable examples, enumerate the following pairs (any *two*) :  
 $2 \times 2 = 4$

- (i) Stereotypic behaviour and Conditioned behaviour

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( Continued )

( 3 )

(ii) Classical conditioning and Operant conditioning

(iii) Associative learning and Non-associative learning

(b) Write short notes on (any *two*) :  $2 \times 2 = 4$

(i) Echolocation in owls or bats

(ii) Stimulus filtering in animals

(iii) Alarm pheromones in ants

3. Answer any *three* of the following questions :  
 $5 \times 3 = 15$

(a) Define sign stimulus. How sign stimulus is correlated with fixed action pattern and motivation?  
 $2 + 3 = 5$

(b) What is territoriality? Discuss various methods of territorial behaviour exhibited by the social animals.  $2 + 3 = 5$

(c) What is motivation? How motivation triggers associative learnings of animals?  $1 + 4 = 5$

(d) What is biological clock? Discuss the influence of photophase and scotophase on the feeding and reproductive behaviour of animals.  $1 + 2 + 2 = 5$

4. What do you mean by kinesis and taxes in animals? Define various types of reflexes in animals. Explain instinctive behaviour of an animal.  $2 + 2 + 3 + 3 = 10$

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( Turn Over )



Or

Define homing behaviour. Write the roles of homing behaviour to instinct migration in fishes, birds and mammals.  $1+3+3+3=10$

5. With suitable examples, discuss the monogenic effects and polygenic effects on behaviour. Genes affect the physiological basis of behaviour. Justify it with suitable examples.  $4+3+3=10$

Or

Animals used hormones and pheromones as tools of their aggressive behaviours. Explain it with suitable examples. Briefly discuss the behaviour of parental care in social organizations of monkeys.  $4+4+2=10$

6. Explain the following :  $2+3+5=10$

- (a) Imprinting is the highly specialized and limited form of learning.
- (b) Habituation is the simplest form of learning seen throughout life.
- (c) Division of labour of honeybee depends on the age, caste and morphology of the individual bees.

Or

Explain the phenomenon of castes in social animals. Discuss the social foraging in monkeys. What are the advantages and disadvantages of social organizations?  $4+3+3=10$