

# ANIMAL BEHAVIOUR AND CHRONOBIOLOGY WITH PRACTICAL CONTENTS

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<b>1. Origin and History of Ethology</b> Introduction, Branches of Ethology, History, Brief profile of some famous Ethologists, Significance of study of animal behaviour.	<b>1-9</b>
<b>2. Concept and Pattern of Ethology</b> <b>Stereotyped behaviour</b> : Motivation, Instinct behaviour or fixed action (FAP), Orientation-Taxis, Kinesis; Reflexes; Concept of Innage Releasing Mechanism (IRM); <b>Learning behaviour</b> ; Behavioural Ecology.	<b>10-38</b>
<b>3. Methods of Studying Animal Behaviour</b> Laboratory Studies, Field studies, Behavioural sampling method	<b>39-46</b>
<b>4. Orientation and Navigation</b> Type of orientation, Taxes, Telotaxis, Menotaxis, Klinotaxis, Mnemotaxis, Animal Navigation, Type of Navigation.	<b>47-60</b>
<b>5. Communication and Social Behaviour</b> Components of Communication, Importance of communication, Eusocial Organisation, Social organisation in termites, Colony structure and polymorphism in termites, Caste determination in social insects, Schooling behaviour in fishes, Social behaviour in monkey, Advantages of social organisation, Altruism, Hamilton's rule, Vocalization in non-human primates, Ecolocation in bats, Visual communication, Chemical Signals, Societies of lions, deer, antelopes, monkey and other mammals.	<b>61-125</b>
<b>6. Reproductive Behaviour</b> Sexual behaviour, Sexual selection, Mechanism of sexual selection, Meta choice, Intrasexual selection (Male & Female rivalry), Direct & indirect benefits and Sexual Dimorphism.	<b>126-145</b>
<b>7. Introduction of Chronobiology</b> Introduction of chronobiology, Basic concept of chronobiology, Biological clock definition, biological rhythms and type, Human chronobiology, Historical development, Biological oscillations, Concept of average (Mean) in biological oscillations, Period and phase of biological oscillations, Adaptive significance, Relevance of Biological Clocks, Role of Melatonin.	<b>146-156</b>
<b>8. Biological Rhythms</b> Introduction of biological rhythms and its type, Infradian rhythms (Long term) and Ultradian rhythms (Short term), Phenomenon of bird migration,	<b>157-177</b>

Nocturnal migratory behaviour, Concept of biological clock, Function and mechanism, Concept of zeitgebers, Photoperiods and insect, Concept of clock gene, Function of clock genes, Sleep-wake cycle, Chronomedicine, Chronotherapy, Concept of synchronization and masking, Regulation of seasonal reproduction in vertebrates.	
<b>9. Practical</b>	<b>178-193</b>
<ol style="list-style-type: none"> <li>1. To study nest and nesting habits of birds/social insects.</li> <li>2. To study geotaxis behavior in earthworm.</li> <li>3. To study scan and focal animal sampling in water birds/ mammals.</li> <li>4. To study circadian functions in humans with special reference to body temperatures.</li> <li>5. To study the taxis behavior in insect larvae.</li> <li>6. To study colouration pattern in fishes.</li> <li>7. To study habituation in mosquito larvae.</li> <li>8. Observation of animal architects: Termites, wasp, harvester ant and any bird.</li> </ol>	
<b>Selected Readings</b>	<b>194-195</b>