

KLE Society's B K College Chikodi

**Zoology Department**

Workload distribution to the existing faculty for the year 2019 - 20

**Teaching hours distribution details**

|                          | B.Sc I | B.Sc II | B.Sc III |        | Total |
|--------------------------|--------|---------|----------|--------|-------|
|                          |        |         | P - I    | P - II |       |
| Dr N R Birasal           | 13     | 12      | 30       | 9      | 64    |
| Smt Sridevi I Puranik    | 7      | 13      | 11       | 19     | 50    |
| Miss Trupti P Khidrapure | 20     | 12      | 9        | 22     | 63    |
| Smt Megha P Kapurkar     | 10     | 10      | 0        | 0      | 20    |
|                          | 50     | 47      | 50       | 50     | 197   |

Department workload (Theory classes) distribution

|                          | B.Sc I  |       | B.Sc II |       | B.Sc III |       |     | Total |
|--------------------------|---------|-------|---------|-------|----------|-------|-----|-------|
|                          | Regular | Extra | Regular | Extra | Regular  | Extra | STC |       |
| Dr N R Birasal           | 1       | 1     | 0       | 4     | 3        | 1     | 0   | 10    |
| Smt Sridevi I Puranik    | 1       | 0     | 2       | 1     | 3        | 0     | 0   | 7     |
| Miss Trupti P Khidrapure | 2       | 1     | 1       | 0     | 2        | 0     | 1   | 7     |
| Smt Megha P Kapurkar     | 0       | 1     | 1       | 0     | 0        | 0     | 1   | 3     |
|                          | 4       | 3     | 4       | 5     | 8        | 1     | 2   | 27    |

**Practical hours distribution details**

|                          | B.Sc I | B.Sc II | B.Sc III |        | Total |
|--------------------------|--------|---------|----------|--------|-------|
|                          |        |         | P - I    | P - II |       |
| Dr N R Birasal           | 4      | 4       | 4        | 4      | 16    |
| Smt Sridevi I Puranik    | 4      | 4       | 4        | 4      | 16    |
| Miss Trupti P Khidrapure | 4      | 4       | 4        | 4      | 16    |
| Smt Megha P Kapurkar     | 0      | 4       | 4        | 4      | 12    |
|                          | 12     | 16      | 16       | 16     | 60    |

For  
HEAD

DEPARTMENT OF ZOOLOGY

Principal

Basavaprabhu Kore College  
Chikodi

29 JUL 2019

# Rani Channamma University First Semester Zoology Syllabus

## BIOLOGY OF NONCHORDATES

### Syllabus distribution for the faculty (w.e.f 17.06.2019)

| UNIT | Topics   | Hours | To be covered by     |
|------|--|-------|----------------------|
| 1    | <b>Taxonomy:</b> Binomial nomenclature and concept of species.   | 2     | Dr N R Birasal       |
|      | <b>Protozoa:</b> General characters & Classification up to classes with examples. General Topics: Locomotion and Nutrition in Protozoa   | 4     |                      |
|      | <b>Porifera:</b> General characters & Classification up to classes with examples. <b>Type study Sycon:</b> Structure & Life history, Canal system, spicules, Spongin fibres and Gemmule  | 5     |                      |
| 2    | <b>Coelenterate:</b> General characters & Classification up to classes with examples. Structure & life history of Obelia. Polymorphism   | 4     | Smt S I Puranik      |
|      | <b>Platyhelminthes:</b> General characters & Classification up to classes with examples. <b>Type Study Fasciola hepatica:</b> External character, Reproductive system & Life history. Parasitic adaptation in Platyhelminthes  | 3     |                      |
|      | <b>Aschelminthes:</b> General characters & classification up to classes with examples. Parasitic adaptations in Aschelminthes  | 2     | Dr N R Birasal       |
| 3    | <b>Annelida:</b> General characters & classification up to classes with examples. <b>Type study Pheretima posthuma:</b> External characters, Digestive system, Excretory system, Nervous system, Circulatory system and Reproductive system.                               | 5     | Smt Megha P Kapurkar |
|      | <b>Arthropoda:</b> General characters & Classification up to classes with examples. <b>Type study Prawn:</b> External characters, Digestive system. Nervous system & Reproductive system. Appendages of prawn. Mouth parts of Cockroach, House fly, Butter fly & Mosquito. | 7     | Miss Trupti P K      |
| 4    | <b>Mollusca:</b> General characters & Classification up to classes with examples. <b>Type study Pila globosa:</b> External characters, Digestive system. Respiratory system. Nervous system & Reproductive system.   | 6     | Miss Trupti P K      |
|      | <b>Echinodermata:</b> General characters & classification up to classes with examples. <b>Type study Starfish:</b> External characters, Digestive system, Water vascular system, and Echinoderm larvae.  | 5     | Smt Megha P Kapurkar |
| 5    | <b>Parasitology:</b> External structure, Life cycle and mode of transmission, Pathogenicity and control measure of the following. (1) Plasmodium vivax (2) Entamoeba histolytica (3) Taenia solium (4) Ascaris (5) Wuchereria bancrofti (6) Ectoparasites – Ticks & mites. | 7     | Miss Trupti P K      |

# Rani Channamma University Third Semester Zoology Syllabus

(Development Biology, Animal Physiology & Biochemistry)

## UNIT - I

| Topics   | Hours | To be covered by  |
|--|-------|-------------------|
| Brief account of Gametogenesis and Fertilization.                            | 2     | Dr<br>N R Birasal |
| Types of Eggs, Cleavage patterns   | 2     |                   |
| Development of Frog up to Gastrulation. Organizer phenomenon.                | 4     |                   |
| Chick development up to 48 hours chick embryo                                |       |                   |
| Placenta types Structure and Functions. Extra embryonic membranes in mammals | 4     |                   |
| Human Development up to Implantation.  |       |                   |

## UNIT - II

|  |   |                            |
|--|---|----------------------------|
| <b>Proteins, Carbohydrates and Lipids:</b> Definition, Classification and Biological Significance.   | 3 | Smt<br>Megha P<br>Kapurkar |
| <b>Enzymes:</b> IUB, Mechanism of enzyme action, specificity of Enzymes, reversibility of enzymes action and Enzyme inhibitors' brief account of coenzymes and cofactors. Clinical importance of enzymes | 4 |                            |
| <b>Vitamins:</b> Water soluble vitamins (B complex and C), Fat soluble vitamins (A, D, E and K)  | 3 |                            |

## UNIT - III

|   |   |                    |
|---|---|--------------------|
| <b>Bioenergetics:</b> Concepts of bio-energetic. Glycolysis, Krebs Cycle & Electron Transport System.         | 3 | Smt S I<br>Puranik |
| <b>Physiology of Digestion:</b> Digestion & absorption of Proteins, Carbohydrates & Fats. Balanced diet.      | 3 |                    |
| <b>Physiology of Respiration:</b> Transport of Oxygen & Carbon dioxide, Chloride shift, Respiratory Pigments. | 2 |                    |

## UNIT - IV

|   |   |                    |
|---|---|--------------------|
| <b>Physiology of Circulation:</b> Structure, function & double circulation of mammalian heart. Types of Hearts -Neurogenic and Myogenic heart. Blood pressure.  | 3 | Smt S I<br>Puranik |
| <b>Physiology of Excretion:</b> Ammonotelic,Ureotelic & Uricotelic Excretion with examples. Ornithine cycle. Physiology of Urine formation in Man.  | 2 |                    |
| <b>Physiology of Muscle Contraction:</b> Ultra structure of striated Muscle. The Structure of myosin, actin, tropomyosin and tropionin. Mechanism of muscle contraction. Sliding filament theory.                         | 2 | Miss Trupti<br>P K |
| <b>Physiology of Nervous Coordination:</b> Structure and propagation of nerve impulse in medullated and non medullated Nerve. Synaptic transmission and Neuro-muscular Junction. Neuro-transmitters and their importance. | 2 |                    |

## UNIT - V

|  |   |                    |
|--|---|--------------------|
| Structure & organs related to Vision, Olfaction & Audition in Human being.   | 6 | Miss Trupti<br>P K |
| <b>Immunology:</b> Bone marrow, thymus, spleen-Payer's patches. T and B cells. Types and Significance .Antigens and Antibodies. Structure of Immunoglobins G (IgG) & Immunization. | 2 |                    |

**Ecology, Evolution, Paleontology, Zoogeography, Wildlife conservation**

| Topics   | HOURS | Portion to be covered by |
|--|-------|--------------------------|
| <b>Ecology:</b>  |       |                          |
| Earth as living planet, sub divisions of ecology, scope of ecology, biosphere  | 1     | NRB                      |
| Ecosystem: Components of the ecosystem (abiotic and biotic factors). Significance of biotic and abiotic components. Food chain, food web. Effect of light and temperature on animals and plants  | 5     |                          |
| <b>Animal interactions:</b> Symbiosis (Mutualism and commensalism), parasitism, predation and competition with examples  | 2     |                          |
| <b>Habitats:</b> Freshwater habitat - Lotic and Lentic systems. Marine habitat - Zonation of Sea, Marine Biota, Estuarine ecology, Mangrooves. Terrestrial habitat: A brief account of Biomes  | 6     |                          |
| Ecological Adaptations Freshwater, Marine and Terrestrial  |       |                          |
| <b>Biogeochemical cycles:</b> Principles and concepts of water, nitrogen, carbon and oxygen cycles   | 4     |                          |
| <b>Community ecology:</b> Community structure, ecological niches, edge effect, stratification, ecotone   | 2     | TPK                      |
| <b>Population ecology:</b> Density, natality, mortality, age distribution, population growth, types and curves.  | 2     |                          |
| <b>The geological time scale:</b> Origin of Earth. Origin of life. Theories with reference to origin of life   | 3     |                          |
| <b>Fossils:</b> Definition and kinds of fossils, how fossils are formed, methods of preservation. Connecting links and living fossils. The importance of fossils   | 2     |                          |
| <b>EVOLUTION:</b> Theories of Organic Evolution: Lamarckism, Darwinism, Mutation Theory and the Modern Synthesis theory (population gene pool, gene frequency. Variations, gene mutation, chromosomal mutation. Isolation and recombination. Genetic drift, Hardy-Wienberg equilibrium)                                    | 5     | SIP                      |
| <b>Evolution of Man and Horse</b>  |       |                          |
| <b>Paleontology:</b> Mesozoic reptiles with a note on Dinosaurs  | 3     |                          |
| <b>Zoogeography:</b> Zoogeographical realms of world with emphasis on climatic conditions and biodiversity of the area. A brief account of Wallace's line  | 3     |                          |
| <b>Wildlife Conservation:</b> Wildlife conservation methods, Wildlife in India, Causes for the depletion of wildlife. Brief account of : IUCN, WWF, Bombay Natural History Society, Indian Board for Wild Life, Red Data Book. Wild Life Act 1972 and its amendments in India, CITES. Project Tiger and Biosphere Reserve. | 12    | NRB                      |

**Genetics, Biotechnology and Biostatistics**

| Topics  | Hours | Portion to be covered by |
|---|-------|--------------------------|
| <b>GENETICS</b> : Introduction, Mendel and his contribution. Monohybrid, Dihybrid cross (Laws). Definition of Genetic terminologies   | 4     | NRB                      |
| <b>Interaction of Genes:</b> Supplementary Factors ; Comb, Pattern in fowls. Dominant Epistasis;- Plumage colour in Leghorn and Wyandote Recessive Epistasis: Coat colour in sweet peas. Complimentary Factors – Flower colour in sweet peas. Lethal gene – Coat colour in mice | 5     | TPK                      |
| <b>Multiple alleles:</b> ABO blood group and Rh factor in human   | 2     | NRB                      |
| <b>Linkage and Crossing Over</b> - Linkage in Drosophila, Significance of Crossing over   | 2     | SIP                      |
| <b>Sex Determination:</b> Chromosomal mechanism of sex determination, Genic balance theory, Gynandromorphs., and intersexes. Syndromes in human: Klinefelter and Turners Environmental and hormonal effects on determination of sex.  | 3     |                          |
| <b>Sex Linked Inheritance</b> in Drosophila and Man (Haemophilia and colour blindness in Man), Sex linkage in poultry, Y - linked genes in man  | 3     | NRB                      |
| <b>Mutations</b> – Chromosomal aberrations, Molecular basis of gene mutation & types  | 2     | TPK                      |
| <b>Human Genetics</b> : Human Genetic disorders - inborn errors of metabolism, Albinism, Phenyl ketonuria, Alkaptonuria, Sickle cell anaemia, Thalassaemia. Huntington's Chorea   | 2     |                          |
| <b>Genetic Code and Protein Biosynthesis:</b> Properties of genetic code and Mechanism of biosynthesis. Wobble hypothesis.  | 3     |                          |
| <b>BIOTECHNOLOGY</b>  |       |                          |
| <b>Introduction</b> Sub-fields of biotechnology history of biotechnology Biotechnology Scenario in India  | 2     | SIP                      |
| <b>Branches of Biotechnology:</b> Animal Biotechnology. Plant Biotechnology Microbial Biotechnology. Environmental Biotechnology Medical Biotechnology  | 4     |                          |
| <b>Molecular biotechnology</b> Genetic engineering, isolation of DNA, Gene cloning. Vectors, Restriction enzymes - Polymerase Chain Reaction (PCR) DNA finger printing  | 4     |                          |
| <b>Applications of Biotechnology:</b> <i>Industrial application:</i> Ethanol production, Food processing, Food fermentors and Industrial enzymes. <i>Environmental Applications:</i> Cleaning up of environmental pollutants, Bioremediation.                                   | 4     |                          |
| <b>BIOSTATISTICS:</b> Fundamentals of Biostatistics, Preliminary Concepts. Frequency distribution. Graphical presentation of Data. Measures of Central Tendency- Mean, Median and Mode. Measures of variation. Probability. Chi-Square Test                                     | 10    | TPK                      |