SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: I
Syllabus with effect from: June-2011

Paper Code: US01CBIO01	Total Credit: 2
Title of Paper: Invertebrata, Hemichordata & Applied Zoology	

Unit	Description in Detail	Weightage (%)
I	Outline classification and significance of classification, Major Invertebrate phyla(Protozoa to Hemichordata) **Type study of Amoeba**- Systematic position, Habit & Habitat, Structure, Locomotion(Sol-gel Theory),Food,Feeding and nutrition(Ingestion methods, digestion, assimilation, diasimilation, egestion), Respiration , Excretion, Osmoregulation, Behaviour, Reproduction (Asexual methods-binary fission, multiple fission, sporulation and encystment) **Type study of Hydra**- Systematic position ,Habit & Habitat, Structure-External and Internal(Histology of body wall, cells of body wall and their functions), Locomotion methods, Food, Feeding and nutrition(Ingestion , digestion, egestion), Respiration , Excretion, Osmoregulation, Nervous system, Reproduction (Asexual and sexual, Fertilization, Development, Regeneration(Excluding Behaviour)	25%
II	**Study of Parasites**-Filaria, Taenia solium and Plasmodium(External structure, lifecycle, pathogenicity, symptoms, prevention and drugs) **Type study of Earthworm**- Systematic position ,Habit & Habitat, External Structure, Body wall and its functions), Coelom-composition and function, Digestive system, Food and Feeding mechanism, Physiology of digestion, Excretory system-types of nephridia, structure, Physiology of Excretion, Nervous system-central, peripheral and sympathetic, Sense organs-Epidermal receptors, buccal and photoreceptors, Reproductive system-male and female, copulation, cocoon formation and development (Excluding circulatory system)	25%
III	**Type study of cockroach**- Systematic position ,Habit & Habitat, External Structure, Segmentation-Head, mouth parts, thorax, walking legs, wings, abdomen, Body wall and its functions, Body cavity, Fat body-cells and function, Digestive system, Food and Feeding mechanism, Physiology of digestion, Digestive glands, Blood vascular system-Haemocoel, heart, haemolymph, circulation of blood, Respiratory system-spiracle and types, trachea, mechanism of respiration, Excretory system-types of excretory organs, structure of malphigian tubules, Physiology of Excretion, Nervous system-central, peripheral and sympathetic, Receptor organs-sensillae and photoreceptor organ, working of compound eye, Reproductive system-male and female, copulation, ootheca formation and development (Excluding endoskeleton and locomotion) **Metamorphosis in Insects** - Definition, Types-(Ametabolous, hemimetabolous, holometabolous, gradual metamorphosis), Hormonal control of metamorphosis in brief	25%
IV	**Pearl culture** - Composition, pearl producing molluscs, formation of pearls Economic importance of Mollusca	25%

	Water vascularsystem in Echinoderms-Composition and working mechanism **Type study of Balanoglossus**-Systematic position, Habit & Habitat, External Structure, body wall, coelom, Digestive system, food, feeding and digestion, Respiratory system and mechanism of respiration, Excretory system, Nervous system, Sense organs, Reproductive system, Fertilization and development, pre-larval development, larval development, tornaria larva, metamorphosis, Asexual reproduction (Excluding endoskeleton & Blood vascular system)	

Basic Text & Reference Books:

- Modern Textbook of Zoology (Invertebrates) - R.L. Kotpal
- Textbook of Invertebrate Zoology Vol - I & II .G.S. Sandhu, H. Bhaskar
- Invertebrate Zoology - Jordan and Verma
- Biology of Animals(Invertebrate)- Ganguly, Sinha and Adhikari (Vol I & II)
- Medical Parasitology - Dey & Dey
- Economic Zoology - Shukla and Upadhyay
- Handbook of Economic Zoology - Jawaid Ahsan, Subhash Prasad Sinha
- Invertebrate Zoology by R.D. Barnes: W.B. Sauwonders