

# **BSC ZOOLOGY**

## **OUTCOMES AND OUTCOME BASED EDUCATION (OBE)**

Outcomes are what the students are expected to be able to do at the end of a unit of learning. The unit of learning is three year formal program.

An Outcome:

- Should unambiguously state what the student should be able to do/perform.
- What the students do or perform are observable and assessable?
- Students should be able to understand what it means (comprehensible).
- Should be able to provide guidance to students in planning their learning.

Outcome Based Education (OBE) was introduced by William Spady in early 1990s for American school system and eventually adapted by higher education systems. This is an approach to education in which decisions about the curriculum and instructions are driven by the exit learning outcomes that the students should display at the end of a programme or a course. OBE establish the conditions and opportunities within the system that enable and encourage all students to achieve those essential outcomes. A system based on outcomes gives top priority for learning, accomplishments and results.

### **Advantages of OBE**

- Relevance*: Outcome based education promotes fitness for practice and education for capability.
- Discourse*: The process of identification of the outcomes within an institution promotes discussion of fundamental questions.
- Clarity*: An explicit statement of what the educational process aims to achieve clarifies the curriculum for both students and teachers, and provides a focus for teaching and learning.
- Provision of a Framework*: OBE provides a robust framework for integration of the curriculum.
- Accountability*: By providing an explicit statement of what the curriculum is setting out to achieve, OBE emphasizes accountability.
- Self Directed Learning*: If students are clear about what they are trying to achieve, they can take more responsibility for their own learning. OBE thus promotes a student-centered approach to learning and teaching.
- Flexibility*: OBE does not specify educational strategies or teaching methods.

- *Guide for Assessment*: The outcomes provide the framework for student examinations.
- *Facilitates Curriculum Evaluation*: The outcomes provide benchmarks against which the curriculum can be judged.

### **Three levels of Outcomes:**

- **Programme Outcomes (POs)**
- **Programme Specific Outcomes (PSOs)**
- **Course Outcomes (COs)**

Programme Outcomes (POs) indicate the generic knowledge, skills and attitudes that every student graduating from a UG programme should attain. While every course of the programme can address only a subset of POs, all the core courses together should be able to address all the POs.

### **1. Programme Outcomes (POs) for General Undergraduate Programme:**

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2. Problem Solving: Understand and solve the problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired from humanities/sciences/mathematics/social sciences.

PO3. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO6. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio-technological changes.

### **2. Programme Specific Outcomes (PSOs):**

PSOs are specific to a programme and are to be attained at the time of graduation from the programme. They are to be identified by a committee with representation from all stakeholders.

## **B.Sc. Zoology Programme**

**PSO1:** Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and process of organic evolution.

**PSO2:** Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities.

**PSO3:** Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology and develop technical skills in biotechnology, bioinformatics and biostatistics.

**PSO4:** Perform laboratory procedures as per standard protocols in the areas of animal diversity, systematics, cell biology, genetics, biochemistry, molecular biology, microbiology, physiology, immunology, developmental biology, environmental biology, ethology, evolution and science methodology.

### **Course Outcomes**

#### **CORE COURSES**

| <b>Semester I</b><br><b>Course Category: Core Course I</b><br><b>Paper name: ANIMAL DIVERSITY: NON-CHORDATA PART- I</b><br><b>Code: ZOL1B01T</b> |  |
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| <b>Course Outcomes</b>   |  |
| CO1  | Describe the principles of classification and nomenclature.  |
| CO2  | Explain the five kingdom classification of living organisms.   |
| CO3  | Understand the concepts of classification of animals.  |
| CO4  | Explain the classification with examples and characteristic features of kingdom Protista and describe the morphology and structural organization of Paramecium                             |
| CO5  | Describe the characteristic features of subkingdom Mesozoa   |
| CO6  | Explain the classification of phylum Porifera and elucidate the salient features of each class   |
| CO7  | Describe the characteristic features of phylum Cnidaria and Ctenophora, illustrate the classification of phylum Cnidaria down to classes and explain the structural organization of Obelia |
| CO8  | Explain the salient features of phylum Platyhelminthes and illustrate its classification down to classes.  |

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| CO9  | Explain the characteristic features and classification of super-phylum Aschelminthes and phylum Nematoda  |
| CO10   | Elucidate the characters of Pseudocoelomate minor phyla Rotifera and Gastrotricha   |
| <b>Semester II</b><br><b>Course Category: Core Course II</b><br><b>Paper name: ANIMAL DIVERSITY: NON-CHORDATA PART – II</b><br><b>Code: ZOL2B02T</b> |   |
| <b>Course Outcomes</b>   |   |
| CO1  | Explain the classification with examples and characteristic features of phylum Annelida and describe the morphology and structural organization of Nearthes                   |
| CO2  | Describe the distribution, peculiarities and affinities of phylum Onychophora   |
| CO3  | Explain the classification of phylum Arthropoda; elucidate the salient features of each class and describe the morphology and structural organization of Penaeus              |
| CO4  | Describe the characteristic features of phylum Mollusca, illustrate its classification down to classes and explain the structural organization of Pila globosa                |
| CO5  | Explain the salient features of phylum Echinodermata and illustrate its classification down to classes  |
| CO6  | Understand the salient features and affinities of phylum Hemichordata   |
| CO7  | Elucidate the characters of coelomate minor phyla Phoronida, Ectoprocta and Echiura   |
| <b>Semester III</b><br><b>Course Category: Core Course III</b><br><b>Paper name: ANIMAL DIVERSITY: CHORDATA PART - I</b><br><b>Code: ZOL3B03T</b>    |   |
| <b>Course Outcomes</b>   |   |
| CO1  | Explain the characteristics of chordates and outline classification of the phylum Chordata  |
| CO2  | Describe the salient features and affinities of subphylum Urochordata and its classification down to classes; elucidate the morphology and structural organization of Ascidia |
| CO3  | Explain the salient features and affinities of subphylum Cephalochordata with reference to Branchiostoma  |
| CO4  | Describe the salient features of subphylum Vertebrata, illustrate its classification down to classes and elucidate the characteristics of division Agnatha                    |
| CO5  | Enumerate the salient features of superclass Pisces and illustrate its classification down to orders and the morphology and structural organization of Mugil cephalus         |

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| CO6  | Describe the salient features and affinities of class Amphibia and its classification up to orders; explain the morphology and organ systems of <i>Hoplobatrachus tigerinus</i>  |
| CO7  | Elucidate the characteristic features of the class Reptilia and its classification down to orders; describe the morphology and organ systems of <i>Calotes versicolor</i>  |
| <b>Semester IV</b><br><b>Course Category: Core Course IV</b><br><b>Paper name: ANIMAL DIVERSITY: CHORDATA PART-II</b><br><b>Code: ZOL4B04T</b> |  |
| <b>Course Outcomes</b>   |  |
| CO1  | Describe the classification of class Aves down to orders, salient features of each order with suitable examples  |
| CO2  | Describe the external characters and functional systems of <i>Columba livia</i>  |
| CO3  | Enumerate the salient features and classification of class Mammalia down to orders with suitable examples  |
| CO4  | Elucidate the external characters and functional systems of <i>Oryctolagus cuniculus</i>   |
| CO5  | Compare the circulatory, excretory and nervous systems of vertebrates  |
| <b>Semester IV</b><br><b>Course Category: Core Course IV</b><br><b>Paper name: ANIMAL DIVERSITY: CHORDATA PART-II</b><br><b>Code: ZOL4B04T</b> |  |
| <b>Course Outcomes</b>   |  |
| CO1  | Describe the classification of class Aves down to orders, salient features of each order with suitable examples  |
| CO2  | Describe the external characters and functional systems of <i>Columba livia</i>  |
| CO3  | Enumerate the salient features and classification of class Mammalia down to orders with suitable examples  |
| CO4  | Elucidate the external characters and functional systems of <i>Oryctolagus cuniculus</i>   |
| CO5  | Compare the circulatory, excretory and nervous systems of vertebrates  |
| <b>Semester I to IV</b><br><b>Course Category: Core Course</b><br><b>Paper name: PRACTICAL – I: ANIMAL DIVERSITY</b><br><b>Code: ZOL4B05P</b>  |  |
| <b>Course Outcomes</b>   |  |
| CO1  | Identify and describe specified protists and acoelomate & pseudocoelomate nonchordates and perform the culture of selected protists; understand the histological features of coelenterate, platyhelminth and nematode. |
| CO2  | Identify and describe specified coelomate non-chordates and the transverse sections of annelids; Perform mounting of the specified organs of selected nonchordates   |

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| CO3   | Identify and describe specified chordates and specified bones of chordates; Prepare key for identification of venomous snakes; Perform mounting and dissection of specified organ systems of chordates.                             |
| CO4   | Identify and describe selected vertebrates and specified bones of vertebrates.  |
| <b>Semester V</b><br><b>Course Category: Core Course V</b><br><b>Paper name: CELL BIOLOGY AND GENETICS</b><br><b>Code: ZOL5B06T</b>                   |   |
| <b>Course Outcomes</b>  |   |
| CO1   | Understand the principles and applications of various types of light microscopes, electron, Scanning-tunnelling and Atomic force microscope and illustrate the histological and histochemical processing of tissues                 |
| CO2   | Explain the basic structure of a eukaryotic cell and the structure and functions of plasma membrane, mitochondria, lysosome, cytoskeletal elements and interphase nucleus   |
| CO3   | Illustrate the nucleosome organization of chromatin and higher order structures; structure of chromosomes and giant chromosomes   |
| CO4   | Enumerate eukaryotic cell cycle and cell division by amitosis, mitosis and meiosis  |
| CO5   | Explain the causes of transformation, characteristics of transformed cells and the role of protooncogenes and tumor suppressor genes in malignant transformation; mechanism and significance of apoptosis                           |
| CO6   | Enumerate allelic and non-allelic gene interactions; supplementary, complementary, polymeric, duplicate and modifying genes and polygenic inheritance   |
| CO7   | Illustrate multiple allelism and solve problems related to blood group inheritance  |
| CO8   | Explain characteristics of linkage groups and linkage map; crossing over and calculation of recombination frequency; sex-linked, sex-influenced and sex-limited characters; sex differentiation and disorders of sexual development |
| CO9   | Describe the mechanisms of sex determination including chromosomal, genic, haploid-diploid mechanisms; the hormonal and environmental influence on sex determination and gynandromorphism   |
| CO10  | Explain mutagenesis, mutagens and chromosomal and gene mutations  |
| CO11  | Enumerate the classification and grouping of human chromosomes; numerical and mutational human autosomal and sex chromosomal anomalies; polygenic human traits and genetic counseling   |
| <b>Semester V</b><br><b>Course Category: Core Course VI</b><br><b>Paper name: BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY</b><br><b>Code: ZOL5B07T</b> |   |
| <b>Course Outcomes</b>  |   |
| CO1   | Illustrate the steps in genetic engineering and animal cell culture   |

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| CO2  | Explain transfection methods, transgenic animals and ethical issues of transgenic animals  |
| CO3  | Enumerate the applications of biotechnology  |
| CO4  | Understand the biological diversity of microbial forms and the various techniques for handling microbes in the laboratory  |
| CO5  | Enumerate the basic structure and life cycle of bacteria and virus   |
| CO6  | Understand the industrial and medical importance of microorganisms   |
| CO7  | Describe different types of immunity and the cells and organs of the immune system   |
| CO8  | Explain antigen, antibody, immunity and major histocompatibility complex   |
| CO9  | Enumerate autoimmune and immunodeficiency diseases and immunology of tumor and organ transplantation   |
| <b>Semester V</b><br><b>Course Category: Core Course VII</b><br><b>Paper name: BIOCHEMISTRY AND MOLECULAR BIOLOGY</b><br><b>Code: ZOL5B08T</b> |  |
| <b>Course Outcomes</b>   |  |
| CO1  | Understand the elements of biological importance and the non-covalent interactions that stabilize biomolecules   |
| CO2  | Describe the classification, types, structure, reactions and biological roles of carbohydrates, and diabetes Type I and II   |
| CO3  | Enumerate the properties and classification of amino acids and their standard abbreviations; hierarchical levels of protein structure, classification, separation, purification and sequencing of proteins |
| CO4  | Explain the classification and functions of lipids and fatty acids; chemistry and structure of nucleic acids and sequencing of DNA   |
| CO5  | Understand the classification, nomenclature and properties of enzymes; enzyme action, co-enzymes, cofactors, isozymes, ribozymes and allosteric enzymes  |
| CO6  | Explain glycolysis, Krebs cycle, glycogenesis, glycogenolysis, gluconeogenesis, HMP pathway; amino acid and fatty acid oxidation and oxidative phosphorylation   |
| CO7  | Describe the mechanism of DNA duplication and the role of enzymes  |
| CO8  | Understand the concept of gene and gene expression; genetic code and wobble hypothesis   |
| CO9  | Explain the mechanism of transcription and post-transcriptional modification of hnRNA  |
| CO10   | Enumerate the processes of translation and post-translational modification and targeting of peptides   |
| CO11   | Describe the regulation of trp operon, C-value, repetitive DNA, satellite DNA, selfish DNA, overlapping genes, pseudogenes, cryptic genes, transposons and retrotransposons                                |
| CO12   | Explain the structure and life cycle of bacteriophages and the gene transfer mechanisms in bacteria  |

| <b>Semester V</b><br><b>Course Category: Core Course VIII</b><br><b>Paper name: METHODOLOGY IN SCIENCE, BIOSTATISTICS AND BIOINFORMATICS</b><br><b>Code: ZOL5B09T</b> |  |
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| <b>Course Outcomes</b>  |  |
| CO1   | Explain science, its importance, disciplines and the major steps in formulating a hypothesis, various hypothesis models, theory, law and importance of animal models, simulations and virtual testing  |
| CO2   | Illustrate the principles and procedures in designing experiments and elaborate the requirements for carrying out experiments  |
| CO3   | Describe the ethical concerns in practicing science  |
| CO4   | Understand the Scope and role of statistics; methods and procedures of sampling; Construction of tables, charts and graphs   |
| CO5   | Calculate central tendency and measures of dispersion and application of its knowledge on hypothesis testing as well as in problem solving   |
| CO6   | Enumerate major biological databases and database search engines   |
| CO7   | Perform DNA and protein sequence analysis, including sequence alignment and sequence similarity search using BLAST, FASTA, CLUSTAL W and CLUSTAL X   |
| CO8   | Understand molecular phylogenetics and tools and methods for construction of phylogenetic trees  |
| CO9   | Explain genome sequencing technologies, functional genomics, proteomic technologies and molecular docking and drug design  |
| <b>Semester V</b><br><b>Course Category: Core Course</b><br><b>Paper name: PRACTICAL – II</b><br><b>Code: ZOL6B15P</b>  |  |
| <b>Course Outcomes</b>  |  |
| CO1   | Perform experiments in cell biology and genetics including demonstration of Barr body in buccal epithelial cells of man, polytene chromosome in the salivary glands of D. melanogaster larva, mitotic division in onion root tip cells, micrometry of microscopic objects, prepare whole mounts of microscopic objects, and calculate mitotic and metaphase index from slides. |
| CO2   | Enumerate the inheritance of major human genetic traits, pedigree chart, normal and abnormal human karyotypes, phenotypic differences of male and female Drosophila and solve problems on Monohybrid, dihybrid crosses, blood groups and sex-linked inheritance.   |
| CO3   | Understand electrophoresis, PCR, Northern blotting, Southern blotting and Western blotting, DNA sequencing and fingerprinting and isolation of genomic DNA.  |
| CO4   | Perform gram staining and preparation of culture media for bacteria and demonstrate bacterial motility by standard laboratory protocols.   |
| CO5   | Understand the detection of human blood groups and organs of immune system   |

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| CO6   | Perform standard biochemical tests for the detection of reducing and nonreducing sugars, polysaccharides, proteins and lipids.   |
| CO7   | Understand the staining of mitochondria, tissue homogenization and isolation of nuclei, effect of colchicines on cell division, extraction of DNA and polyacrylamide and agarose gel electrophoresis |
| CO8   | Solve basic problems in biostatistics and Bioinformatics   |
| <b>Semester VI</b><br><b>Course Category: Core Course IX</b><br><b>Paper name: PHYSIOLOGY AND ENDOCRINOLOGY</b><br><b>Code: ZOL6B10T</b>          |  |
| <b>Course Outcomes</b>  |  |
| CO1   | Describe the regulation of digestion in man, nutrition in pregnancy and infancy, nutritional disorders, balanced diet, starvation, fasting and obesity.  |
| CO2   | Understand the mechanism of transport and exchange of respiratory gases and its neurophysiological control and physiological problems in diving mammals, newborn and aged individuals.               |
| CO3   | Describe functions, composition, coagulation, transfusion, agglutination and clinical analysis of blood, haemoglobinopathies, types of heart and common cardio-vascular problems.                    |
| CO4   | Understand the osmoregulatory mechanisms in animals; excretion and its hormonal control and common renal disorders in man.   |
| CO5   | Explain the ultrastructure of skeletal muscles and biochemical events and energetics of muscle contraction.  |
| CO6   | Understand the different types of nerve cells, glial cells and nerve fibres, and the mechanism of nerve impulse transmission   |
| CO7   | Understand the types, physiology and significance of bioluminescence, and the structure and functions of electric organs.  |
| CO8   | Describe invertebrate neuro-endocrine organs and hormones, vertebrate endocrine glands, their hormones and functions   |
| CO9   | Understand the concept of neurosecretion and the mode of action of peptide and steroid hormones.   |
| <b>Semester VI</b><br><b>Course Category: Core Course X</b><br><b>Paper name: REPRODUCTIVE AND DEVELOPMENTAL BIOLOGY</b><br><b>Code: ZOL6B11T</b> |  |
| <b>Course Outcomes</b>  |  |
| CO1   | Explain the reproductive strategies in invertebrates and vertebrates and structural and functional features of human reproductive system.  |
| CO2   | Describe process of fertilization, pregnancy, gestation, placentation, parturition and lactation in humans.  |
| CO3   | Explain the scope of reproductive technologies in infertility management; prenatal diagnostic techniques and methods of fertility control.   |
| CO4   | Understand the phases and theories of development, and classification of eggs  |

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| CO5 | Enumerate the types of cleavage, arrangement of blastomeres, germ layers and their derivatives, cell lineage in Planocera and different types of blastula.  |
| CO6 | Illustrate the early developmental process of egg in Amphioxus, frog, chick and man   |
| CO7 | Explain the basics of cell differentiation and its genetic control, stem cells and applications of stem cell technology   |
| CO8 | Describe parthenogenesis, types, and significance   |
| CO9 | Explain fate map construction, Spemann's constriction experiments on amphibian embryos, organizers in development, embryonic induction, gradient experiments in sea urchin eggs, cloning experiments in sheep and teratogenesis |

**Semester VI**  
**Course Category: Core Course XI**  
**Paper name: ENVIRONMENTAL AND CONSERVATION BIOLOGY**  
**Code: ZOL6B12T**

**Course Outcomes**

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| CO1 | Explain the structure of ecosystem and its functioning through energy flow and nutrient cycling.  |
| CO2 | Enumerate biogeochemical cycles and understand the concept of limiting factors  |
| CO3 | Describe the ecology of population, community and habitat as a self regulating system   |
| CO4 | Understand various types of population interactions and appraise the co-evolution   |
| CO5 | Comprehend the diverse environmental and sustainability challenges ranging from local to global and the establishment of perfect harmony between economic development, social issues and environmental conservation |
| CO6 | Enumerate the several tools and techniques employed for studies on populations, communities and ecosystems.   |
| CO7 | Understand the threats to biodiversity, and strategies adapted for the conservation of diversity of organisms.  |
| CO8 | Describe the various international strategies for conserving biodiversity   |
| CO9 | Describe the toxic chemicals, their toxicity levels and the health hazards caused by them   |

**Semester VI**  
**Course Category: Core Course XII**  
**Paper name: ETHOLOGY, EVOLUTION AND ZOOGEOGRAPHY**  
**Code: ZOL6B13T**

**Course Outcomes**

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| CO1 | Describe the patterns and mechanisms of animal behaviour   |
| CO2 | Illustrate biological rhythms and the chemical basis of communication  |
| CO3 | Identify major evolutionary transitions over time, and explain the tools and evidences that support current hypotheses of the history of life on earth |

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| CO4 | Describe the evidences for evolution and its required corollaries   |
| CO5 | Explain the various theories of evolution   |
| CO6 | Describe the mechanisms by which evolution occurs   |
| CO7 | Recognize the significance of reproductive isolation in reducing gene flow between populations, biological and morphological species concepts and distinguish between prezygotic and postzygotic barriers to reproduction |
| CO8 | Review the events in human evolution  |
| CO9 | Explain ecological and historical foundations for understanding the distribution and abundance of species, and their changes over time and comprehend the basic principles of biogeography as a discipline                |

**Semester VI**  
**Course Category: Core Course**  
**Paper name: PRACTICAL – III**  
**Code: ZOL6B16P**

**Course Outcomes**

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| CO1 | Perform standard laboratory experiments for the estimation of Hb, presence of hCG/abnormal constituents in urine, detection of blood pressure, bleeding and clotting time and identification of formed elements in blood                               |
| CO2 | Identify selected stages in the development of frog and chick and chosen larval forms of invertebrates and vertebrates   |
| CO3 | Carry out experiments of laboratory standards to estimate water quality parameters including, dissolved Oxygen, Carbon dioxide, hardness and pH; determination of adulteration of selected food items and identify marine planktons and soil organisms |
| CO4 | Demonstrate the behavioural response of earthworm/dipteran larva to selected stimuli   |
| CO5 | Describe homologous , analogous and vestigial organs, connecting links, adaptive radiation and evolution of man  |
| CO6 | Illustrate zoogeographical realms, Wallace line, Weber line, Wallacea and the distribution of Peripatus, lung fishes, Sphenodon, monotremes and marsupials   |
| CO7 | Identify the normal and selected abnormal human karyotypes and inheritance of chosen traits from pedigree charts/describe ornamental and other culture fishes/ describe chosen beneficial and harmful insects  |
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**ELECTIVE COURSES**

**Semester VI**  
**Course Category: Elective Course I**  
**Paper name: AQUACULTURE, ANIMAL HUSBANDRY AND POULTRY SCIENCE**  
**Code: ZOL6B14(E)02T**

| <b>Course Outcomes</b>  |   |
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| CO1   | Explain aquaculture and the process of prawn, mussel and pearl culture  |
| CO2   | Illustrate the methodology of pisciculture and understand common culture fishes and ornamental fishes   |
| CO3   | Identify major fishing crafts and gear and enumerate fish utilization and preservation  |
| CO4   | Enumerate the poultry rearing techniques and understand major breeds of fowl  |
| CO5   | Understand the major breeds of cattle, cattle feeds and diseases of cattle  |
| CO6   | Illustrate the steps in dairy processing and identify the role of dairy development in rural economy  |
| <b><u>OPEN COURSES</u></b>  |   |
| <b>Semester V</b><br><b>Course Category: Open Course I</b><br><b>Paper name: REPRODUCTIVE HEALTH AND SEX EDUCATION</b><br><b>Code: ZOL5D01T</b> |   |
| <b>Course Outcomes</b>  |   |
| CO1   | Understand the reproductive health, and importance of sex education for teen and youth.   |
| CO2   | Explain the chromosomal mechanism of sex determination and sex chromosomal anomalies.   |
| CO3   | Describe the structural and functional features of human reproductive system, fertilization, implantation, pregnancy, gestation, placenta, parturition and lactation. |
| CO4   | Explain the scope of reproductive technologies in infertility management and the assisted reproductive techniques.  |
| CO5   | Understand the different methods of prenatal diagnosis and associated ethical issues  |
| CO6   | Describe the different methods of fertility control.  |
| CO7   | Understand the symptoms, mode of transmission, diagnosis and treatment of different sexually transmitted diseases and their socio economic dimensions.                |
| CO8   | Describe sexual orientation, sexual abuse and myths   |
| CO9   | Understand the ethical aspects of sex   |