

DEPARTMENT OF ZOOLOGY



MISS. VASAVI JOSHI

N V Degree College - Kalaburagi

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SCOPE OF THE SUBJECT

Zoology is one of the most popular branches in Science this involves the study of animals and their biological processes. in this discipline are basically taught regarding animal anatomy, physiology, biochemistry, genetics, evolution, ecology, behavior, and conservation.

Year of dept established : 2018

Started by : Mr Ramesh
worked till date AUG 2021

No of students when established : 21

Present total number of students : 50

Passed result : 100%

Highest % : 90% Shryus

Adhar No : 465798226864

PAN : CCBPJ0375E

Qualification : MSc ,B.Ed

Research topic : Ecological distribution of dwarf honey bee in
Kalaburagi region

Research Guide : Dr Prabhawati patil
Sharnbasava university kalaburagi

Date of Appointment : 27 /10/2021

Experience : 15 months and Running

Qualification : M.Sc. (Zoology)

Present Address : Plot no3 Raghavendrabhagyajayateertha
nagar behind jayateerthakalyanmantap
santosh colony Gulbarga
585102

Students persuing higher education : 3 Students MSc In Sharnbasva University
5 Students MBA

SYLLABUS OF ALL THE 3 SEMESTERS

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III Semester – DSC - 3C

PHYSIOLOGY, BIOCHEMISTRY AND HISTOLOGY (THEORY) (60 Hrs)

UNIT. I:

1. : Digestion 5

Physiology of digestion in the alimentary canal; Absorption of carbohydrates, proteins, lipids

2: Cardiovascular system 6

Composition of blood, Hemostasis, Structure of Heart, Origin and conduction of the cardiac impulse, Cardiac cycle. Cardiac output electrocardiogram (ECG), Integration of cardiovascular function

UNIT.II:

3: Respiration 5

Pulmonary ventilation, Respiratory volumes and capacities, Transport of Oxygen and carbon dioxide in blood

4: Excretion 5

Structure of nephron, Mechanism of Urine formation, Counter-current Mechanism. Control & excretion (role of ADH, RAS)

UNIT – III:

5: Nerve and muscle 9

Structure of a neuron, Resting membrane potential, Graded potential, Origin of Action potential and its propagation in myelinated and non-myelinated nerve fibres, Ultra-structure of skeletal muscle, Molecular and chemical basis of muscle contraction

UNIT – IV:

6: Carbohydrate Metabolism 7

Glycolysis, Krebs Cycle, Pentose phosphate pathway, Gluconeogenesis, Glycogen metabolism, Review of electron transport chain

7: Lipid Metabolism 4

Biosynthesis and β oxidation of palmitic acid

UNIT – V:

8: Protein metabolism 4

Transamination, Deamination and Urea Cycle

9: Enzymes 4

Introduction, Mechanism of action, Enzyme Kinetics, Inhibition and Regulation

UNIT:VI 11

10: Histology of mammalian Tongue, Stomach, Intestine, Liver, Pancrease, Kidney, Adrenal , Thyroid, Pituitary gland, Testis & Ovary

Vth Semester DSE – 1
Cell and Molecular Biology

(60 Hrs)

UNIT – I:Cell Biology	15
1.1 Cell theory; Differences of Prokaryotic and Eukaryotic cells.	
1.2 Ultrastructure of animal cell; Structure and functions of plasma membrane .	
1.3 Structure and functions of cell organelles – Endoplasmic reticulum, Golgi body, Ribosomes, Lysosomes, centrosomes, Mitochondria and Nucleus.	
UNIT – II :Cell Division and Cancer Biology	15
2.1. Chromosomes – Structure, types, giant chromosomes.	
2.2. Cell Division - Mitosis, Meiosis; Cell cycle and its regulation.	
2.3.Cancer biology:Introduction,general properties of cancer cells. Carcinogens,Prevention & regulation of cancer. Gene therapy, Chemotherapy & radiotherapy.Cell sequence & apoptosis.	
UNIT – III:Molecular Biology	20
3.1.Identification of genetic material, Griffith’s experiment.	
3.2.DNA (Deoxyribo Nucleic Acid) – Structure; DNA Replication.	
3.3.RNA (Ribo Nucleic Acid) - Structure, types.	
3.4. Mutations-Chromosomal mutation: Deletion, Inversion,translocation, Aneuploidy & Polyploidy.	
Gene mutations-Induced versus Spontaneous mutations. Inborn errors of metabolism;One gene one enzymes,one gene one polypeptide theory.	
3.5.Protein Synthesis – Transcription and Translation.	
3.6.Gene Expression – Genetic Code; operon concept.	
3.7.Molecular Biology Techniques - Polymerase Chain Reaction, Electrophoresis	
UNIT – IV:Genetic Engineering:	10
4.1.rDNA technology tools used in rDNA technology.	
4.2.Plasmids,Cloning strategies.	
4.3.Application of genetic engineering in medicine & engineering.	

Semester I- Zoology Core Course I Content

Content	Hours
Unit I	14
<p>Chapter 1. Structure and Function of Cell Organelles I in Animal cell</p> <p>Chapter 2 Plasma membrane: chemical structure—lipids and proteins</p> <p>Chapter 3 Endomembrane system: protein targeting and sorting, transport, endocytosis and exocytosis</p>	
<p>Chapter 2. Structure and Function of Cell Organelles II in Animal Cell</p> <ul style="list-style-type: none"> • Cytoskeleton: microtubules, microfilaments, intermediate filaments • Mitochondria: Structure, oxidative phosphorylation; electron transport system • Peroxisome and Ribosome: structure and function 	
Unit II	14
<p>Chapter 3. Nucleus and Chromatin Structure</p> <ul style="list-style-type: none"> • Structure and function of nucleus in eukaryotes • Chemical structure and base composition of DNA and RNA • DNA supercoiling, chromatin organization, structure of chromosomes • Types of DNA and RNA 	
<p>Chapter 4. Cell cycle, Cell Division and Cell Signaling</p> <ul style="list-style-type: none"> • Cell division: mitosis and meiosis • Introduction to Cell cycle and its regulation, apoptosis • Signal transduction: intracellular signaling and cell surface receptors, via G-protein linked receptors • Cell-cell interaction: cell adhesion molecules, cellular junctions 	
Unit III	14
<p>Chapter 5. Mendelism and Sex Determination</p> <ul style="list-style-type: none"> • Basic principles of heredity: Mendel's laws- monohybrid cross and hybrid cross • Complete and Incomplete Dominance • Penetrance and expressivity • Genetic Sex-Determining Systems, Environmental Sex Determination, Sex Determination and mechanism in <i>Drosophilamelanogaster</i>. <p>Sex-linked characteristics in humans and dosage compensation</p>	
Unit IV	14
<p>Chapter 6. Extensions of Mendelism, Genes and Environment</p> <ul style="list-style-type: none"> • Extensions of Mendelism: Multiple Alleles, Gene Interaction. • The Interaction Between Sex and Heredity: Sex-Influenced and Sex-Limited Characteristics • Cytoplasmic Inheritance, Genetic Maternal Effects. • Interaction between Genes and Environment: Environmental Effects on Gene Expression, Inheritance of Continuous Characteristics. 	
<p>Chapter 8. Infectious Diseases</p> <ul style="list-style-type: none"> • Introduction to pathogenic organisms: viruses, bacteria, fungi, protozoa and worms. • Structure, life cycle, pathogenicity, including diseases, causes, symptoms and control of common parasites: <i>Trypanosoma</i>, <i>Giardia</i> and <i>Wuchereria</i>. 	

Suggested Readings :

1. Lodish *et al*: Molecular Cell Biology: Freeman & Co. USA(2004)
2. Alberts *et al*: Molecular Biology of the Cell: Garland Science, New York (2002)

SEMINARS CONDUCTED BY I ,III AND IV STUDENTS











FIELD VISIT :

1. GULBARGA DIST GOVT VETERINARY HOSPITAL

1/24/2002

Animal Husbandry Department played a role in upliftment of economic condition and providing employment in villages. Hence small and marginal farmers enhanced their economic condition.

As per the 2012 Animal Census there on 10.93 lakhs livestock and 3.62 lakhs poultry.

In Kalaburagi district, there are 214 Veterinary Institution working. In this, 1(one) Super Speciality Hospital, 29Veterinary Hospital, 109 Veterinary Dispensaries, 68 Primary Veterinary Centres, and 7 Mobile Veterinaty Clinic are working.

MAIN ACTIVITIES OF DEPARTMENT

1. Doing Artificial Insentination to Animals
2. Carrying out the vaccinations to Animals against different contagious Diseases.
3. Health coverage of Animals
4. Fodder development Programmes
5. Extending Artificial Inseminate to farmers & Doorstep Services of Treatment of Animals Through Mobile roots and Artificial Insemination Programme through Maitri Workers.
6. Coverage of Insurance of Animals
7. Training of farmers in advance Dairy management sheep & Goat rearing
8. Treatment of Infertile Animals in Animal Health Camp







1. VISIT TO MEDISCAN DIAGNOSTIC CENTRE KALABURAGI



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SHIVU.SGR

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EXTRA DEPARTMENTAL ACTIVITIES

● BLOOD GROUPING ANALYSIS

Blood Grouping Camp is a great opportunity to meet with potential blood donors. It creates a scope to motivate people to donate blood. By starting the conversation we actually try to break the ice. Having a wrong idea often lead people against the donation of blood.



