



B.L.D.E. Association's

SB ARTS AND KCP SCIENCE COLLEGE,
VIJAYAPUR-586103



DEPARTMENT OF ZOOLOGY



**PROGRAMME OUTCOME , PROGRAMME
SPECIFIC OUTCOME, PROGRAMME COURSE
OUTCOME & EVALUATION MAPPING**

2019-20

SB ARTS & KCP SCIENCE COLLEGE, VIJAYAPUR

DEPARTMENT OF ZOOLOGY

PROGRAMME OUTCOME:

Programme	Objectives
PO1: Understanding of fundamental knowledge.	Definition, concept, principles, types, methods, etc.
PO2: Experimental learning Methods.	Qualitative analysis, mounting, instrument handling, demonstration
PO3: Opportunities	Higher Education ,Competitive exams, Entrepreneurship and Job Career.

PROGRAMME SPECIFIC OUTCOME:

Programme	Objectives
PSO1: Acquiring basic fundamental parameters	Definition, concept, types, Principles, functions, life cycle.
PSO2: Interdisciplinary Courses.	Parasitology, Embryology, Cytology, Oncology, Animal behavior, Biotechnology, Biostatistics ,Applied Zoology. Biochemistry, Genetics, Bioenergetics, Immunology
PSO3: Exploring Animal Diversity	Identification of variety of Invertebrate and Vertebrate species
PSO4: Development of designing skills.	Graphs, Diagrams, Biological cycles
PSO5: Ability to Enhance skills.	Making of Permanent histological and embryological slides, Staining procedures, Mounting
PSO6: Awareness to technology	Biotechnology, Nanotechnology
PSO7: Building Applied Skills in Environmental science.	Bio-Conservation, Wild life Management
PSO8 :Building Research culture	Developmental biology, Cell biology, Animal physiology, Oncology, Endocrinology, Parasitology
PSO9: Field Visit	Biodiversity, National parks and Sanctuary, Ecosystem (pond, Marine and Terrestrials), Biotechnological and Microbiology Equipped Laboratories, Diagnostic Centre.
PSO10: Part of Government sectors	Forest Department, Environmental Sociologist , Competitive Exams
PSO11: Self Employment.	Sericulture, Apiculture, Aquaculture, Vermiculture, Pest management, Pearl culture, Animal husbandry, Poultry, Biochemist,

B.Sc I Semester (Biology of Non Chordates-Theory)

CO1- Student will learn about taxonomy, General characters and Classification upto example of phylum Protozoa and Porifera.

CO2- Student will learn about General characters and Classification up to example of phylum Coelenterata, Platyhelminthes and Aschelminthes.

CO3- Student will learn about General characters and Classification upto example of phylum Annelida and Arthropoda.

CO4- Student will learn about General characters and Classification upto example of phylum Mollusca and Echinodermata

CO5- They will understand about Parasite its adaptation and mode of transmission.

Mapping of COs with POs and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
CO1	3	3	3	3	2	3	3	1	-	-	2	3	1	-
Co2	3	2	2	3	3	3	3	-	-	-	2	3	1	-
Co3	3	3	2	3	-	3	3	-	-	-	-	3	1	-
CO4	3	-	2	3	-	3	3	-	-	-	-	3	1	-
CO5	3	2	2	3	3	2	3	-	-	-	3	2	2	-

B.Sc I Semester (Biology of Non Chordates -Practical)

PCO1- Student will learn about Protozoan culture and preparation of slides

PCO2- Student will learn about classification upto classes with one suitable example from each Phylum Protozoa to Annelida.

PCO3- Student will learn about classification upto classes with one suitable example from each Phylum Arthropoda to Echinodermata

PCO4- Student will learn and understand about mouth parts of insects.

PCO5- They will learn about parasitic adaptation of different parasites

PCO6- Students will be demonstrated and explained about earthworm.

Mapping of PCOs with POs and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
PCO1	3	3	3	3	-	3	3	3	-	-	1	3	-	-
PCo2	3	-	3	3	-	3	3	-	-	-	-	3	1	-
PCo3	3	-	3	3	-	3	3	-	-	-	-	3	1	-
PCO4	3	-	3	3	-	3	3	-	-	-	1	3	-	-
PCO5	3	-	3	3	3	3	3	-	-	-	2	3	1	-
PCO6	3	3	3	3	-	3	3	3	-	-	2	-	-	-

B.Sc II Semester (Biology of Chordates-Theory)

CO1- Student will learn about Chordates General characters and Classification of Sub phylum Hemichordata, Urochordata, Cephalochordata, Cyclostomata

CO2- Student will learn General characters and Classification of phylum pisces and Amphibians

CO3- Student will learn about General characters and Classification of phylum Reptiles and Aves

CO4- Student will learn about General characters and Classification of phylum Mammals and Comparative anatomy

Mapping of Cos with POs and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	PS03	PS04	PS05	PS06	PS07	PS08	PS09	PS010	PS011
CO1	3	1	3	3	-	3	3	-	-	-	1	3	1	-
Co2	3	2	3	3	-	3	3	-	-	-	3	3	1	-
Co3	3	-	3	3	-	3	3	-	-	-	2	3	2	-
CO4	3	1	3	3	-	3	3	-	-	-	1	3	2	-

B.Sc II Semester (Biology of Chordates -Practical)

PCO1- Student will learn about Classification of Sub phylum Hemichordata, Urochordata, Cephalochordata, Cyclostomata

PCO2- Student will learn about Classification of phylum fishes

PCO3- Student will learn about Classification of phylum Amphibians.

PCO4- Student will learn about Classification of phylum Reptiles.

PCO5- Student will learn about Classification of phylum Aves

PCO6- Student will learn about Classification of phylum mammals

PCO7- Student will learn about comparative anatomy heart and brain

PCO8- Student will be demonstrated and explained about the bony fish

Mapping of PCOs with Pos and PSO's on Practical:

Pco\Pos and PSO's	Po1	Po2	Po3	Pso1	Pso2	PS03	PS04	PS05	PS06	PS07	PS08	PS09	PS010	PS011
PCO1	3	-	2	3	-	3	3	-	-	-	1	3	2	-
Pco2	3	-	2	3	-	3	3	-	-	-	2	3	1	-
Pco3	3	-	1	3	-	3	3	-	-	-	2	3	2	-
PCO4	3	-	2	3	-	3	3	-	-	-	2	3	1	-
PCO5	3	-	1	3	-	3	3	-	-	-	1	3	1	-
PCO6	3	-	2	3	-	3	3	-	-	-	2	3	2	-
PCO7	3	-	2	3	-	3	3	-	-	-	2	3	2	-
PCO8	3	3	3	3	-	-	3	3	-	-	1	-	2	-

B.Sc III Semester (Developmental Biology, Animal Physiology and Biochemistry-Theory)

CO1- Student will learn about Embryology

CO2- Student will learn about Animal physiology and Biochemistry

CO3- Students will learn about Bioenergetics, Physiology of Digestion and Respiration

CO4- Student will learn about Physiology of Circulation, Excretion, Muscle contraction and Nervous Coordination

CO5- They will acquire the knowledge about Structure and organ related to Vision, Olfaction and Audition and Immunology

Mapping of COs with Pos and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Ps01	Ps02	Ps03	Ps04	Ps05	Ps06	Ps07	Ps08	Ps09	Ps010	Ps011
CO1	3	3	3	3	3	3	3	3	2	-	3	3	3	2
Co2	3	3	3	3	3	3	3	-	-	-	3	1	1	3
Co3	3	-	3	3	3	3	3	-	-	-	3	1	1	1
CO4	3	-	3	3	-	3	3	-	-	-	3	1	1	-
CO5	3	-	3	3	3	1	3	-	3	-	3	-	1	3

B.Sc III Semester (PRACTICAL)

PCO1- Student will learn about developmental stages of frog up to Neurula

PCO2- Student will learn about developmental stages of chick embryo.

PCO3- Students will mount the stages of chick embryo to make a permanent slide

PCO4- Student will learn about Qualitative test for Glucose, Starch, Protein, Fat and Sucrose.

PCO5- They will learn about Qualitative test for Normal and Abnormal Constituents of Urine.

PCO6- Students will Prepare Haematin Crystals

PCO7- They will Estimate Haemoglobin by Sahl's Method .

Mapping of PCOs with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Ps01	Ps02	Ps03	Ps04	Ps05	Ps06	Ps07	Ps08	Ps09	Ps010	Ps011
PCO1	3	3	3	3	3	1	3	-	3	-	3	-	3	1
PCo2	3	3	3	3	3	1	3	-	3	-	3	-	3	1
PCo3	3	3	3	3	-	-	3	3	1	-	3	-	1	-
PCO4	3	3	3	3	3	-	-	-	-	-	2	-	3	3
PCO5	3	3	3	3	3	-	-	-	-	-	2	-	1	3
PCO6	3	3	3	3	2	-	-	3	-	-	-	-	1	3
PCO7	3	3	3	3	2	-	-	3	-	-	1	-	1	3

B.Sc IV Semester (Cell Biology, Histology and Animal Behaviour-Theory)

CO1- Student will learn about the cell biology.

CO2- Student will learn knowledge about Chromosomes, Cell division, Cellular aging and death and Cancer Biology

CO3- Students will learn about the Histochemical techniques and histological structures and functions of following Mammalian organ Tongue, Salivary gland, Stomach, Intestine, Liver and Kidney.

CO4- Student will learn about the histological structure and Endocrine functions of following mammalian organs-Pituitary, Pancreas, Adrenal, Thyroid, Parathyroid, Thymus, Testis and Ovary.

CO5- They will learn the Ethology (Animal Behaviour)

Mapping of COs with POs and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
CO1	3	-	3	3	3	-	3	-	-	-	3	-	3	-
Co2	3	3	3	3	3	1	3	3	3	-	3	-	3	-
Co3	3	3	3	3	-	1	3	3	-	-	3	-	1	3
CO4	3	3	3	3	-	1	3	3	-	-	3	-	2	3
CO5	3	-	3	3	-	3	-	-	-	-	3	3	3	1

B.Sc IV Semester (Cell Biology, Histology and Animal Behaviour -Practical)

PCO1- Student will learn about the permanent Cytological slides of Mitosis and Meiosis .

PCO2- Student will learn about Temporary preparation of mitotic stages from onion root tip.

PCO3- Students will learn about the Temporary preparation of meiotic stages from onion flower bud/Grasshopper testis .

PCO4- Student will learn about the preparation and observation of permanent . histological slides.

PCO5- Student will learn about the mimicry

PCO6- Student will learn about the nest and nesting material

Mapping of PCOs with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
PCO1	3	-	3	3	3	-	3	-	-	-	1	-	2	-
PCo2	3	3	3	3	3	-	3	3	-	-	2	-	1	-
PCo3	3	3	3	3	3	-	3	3	-	-	2	-	2	-
PCO4	3	3	3	3	-	-	3	3	-	-	2	-	2	-
PCO5	3	-	3	3	-	3	2	-	-	-	3	3	3	-
PCO6	3	-	3	3	-	3	1	-	-	2	3	3	3	1

Mapping of PCOs with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	PSo3	PSo4	PSo5	PSo6	PSo7	PSo8	PSo9	PSo10	PSo11
PCO1	3	-	3	3	-	3	3	-	-	-	2	-	-	-
PCo2	3	-	3	3	-	3	3	-	-	-	2	-	-	-
PCo3	3	-	3	3	-	3	3	-	-	-	3	-	-	-
PCO4	3	-	3	3	-	1	3	-	-	-	2	-	-	-
PCO5	3	-	3	3	-	3	3	-	-	-	2	-	-	-
PCO6	3	-	3	3	-	3	3	-	-	-	1	-	-	-
PCO7	3	3	3	3	3	-	-	-	-	-	3	-	-	-
PCO8	3	3	3	3	3	-	-	-	-	-	3	-	-	-
PCO9	3	3	3	3	3	-	-	-	-	-	1	-	-	-
PCO10	3	-	3	3	3	-	3	-	-	1	2	-	-	-
PCO11	3	-	3	3	3	3	-	-	-	3	2	-	3	-
PCO12	3	-	3	3	3	3	-	-	-	3	3	-	3	-
PCO13	3	-	3	3	-	-	3	-	-	3	3	3	-	-

B.Sc V Semester (Paper II: Genetics, Biotechnology and Biostatistics - Theory)

CO1- Student will study about the Genetics

CO2- Student will get the knowledge about Biotechnology

CO3- Students will learn about the biostatistics

Mapping of Cos with Pos and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	PSo1	PSo2	PSo3	PSo4	PSo5	PSo6	PSo7	PSo8	PSo9	PSo10	PSo11
CO1	3	3	3	3	3	1	2	-	-	3	3	-	3	-
Co2	3	3	3	3	3	1	1	1	3	3	3	-	3	2
Co3	3	3	3	3	3	1	3	-	-	3	-	-	-	-

B.Sc V Semester (Paper II: Genetics, Biotechnology And Biostatistics - Practical)

PCO1- Student will learn about the Human Karyotype and disorders

PCO2- Student will solve the problems based on monohybrid, dihybrid, sex linked inheritance and multiple alleles

PCO3- Students will learn the calculation of Gene frequency

PCO4- Student will learn about the blood groups.

PCO5- Students will learn about the paper chromatography,

PCO6- Students will learn to form frequency distribution table and draw histogram, frequency polygon and frequency curve

PCO7- Students will learn about the measurements of central tendency

PCO8- Student will learn about isolation of DNA and RNA

PCO9- Student will learn to prepare giant chromosome /Drosophila salivary gland chromosome

Mapping of PCOs with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	PSo1	PSo2	PSo3	PSo4	PSo5	PSo6	PSo7	PSo8	PSo9	PSo10	PSo11
PCO1	3	-	3	3	3	-	-	-	-	-	3	-	3	-
PCo2	3	-	3	3	3	-	-	-	-	-	3	-	2	-
PCo3	3	3	3	3	3	-	-	-	-	-	3	-	3	-
PCO4	3	3	3	3	3	-	-	-	-	-	3	-	2	-
PCO5	3	3	3	3	3	-	-	-	-	-	3	-	1	-
PCO6	3	-	3	3	3	-	3	-	-	-	-	-	2	-
PCO7	3	-	3	3	3	-	-	-	-	-	-	-	3	-
PCO8	3	3	3	3	3	-	-	3	3	-	3	-	2	-
PCO9	3	3	3	3	3	-	3	3	-	-	3	-	1	-

B.Sc VI Semester (Paper I: Applied Zoology-Theory)

- CO1- Student will get the knowledge of Sericulture
 CO2- Student will learn the knowledge about Apiculture.
 CO3- Students will learn about Vermiculture
 CO4- Student will learn about Aquaculture.
 CO5- They will learn about the Animal husbandry

Mapping of Cos with Pos and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
CO1	3	-	3	3	3	3	3	-	-	-	2	3	3	3
Co2	3	-	3	3	3	3	3	-	-	-	3	3	3	3
Co3	3	-	3	3	3	3	3	-	-	-	2	3	3	3
CO4	3	-	3	3	3	3	3	-	2	-	3	3	3	3
CO5	3	-	3	3	3	3	1	-	-	-	3	3	3	3

B.Sc VI Semester (Paper I: Applied Zoology - Practical)

- PCO1- Student will prepare a project on one of the applied branch studied in theory.
 PCO2- Student will learn about the mulberry silkworm and life cycle.
 PCO3- Students will learn about the non mulberry silk worm and silk worm diseases
 PCO4- Student will learn about species and casts of Honey bee.
 PCO5- Students will get the knowledge about agricultural pest and domestic pest.
 PCO6- Students will learn about fisheries
 PCO7- Student will learn about the variety of cow and buffaloes
 PCO8- Student will learn about the vermiculture
 PCO9- Student will learn about the Poultry breeds

Mapping of PCos with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	Pso3	Pso4	Pso5	Pso6	Pso7	Pso8	Pso9	Pso10	Pso11
PCO1	3	-	3	3	3	3	3	-	-	-	3	3	-	3
PCo2	3	-	3	3	3	3	3	-	-	-	2	3	3	3
PCo3	3	-	3	3	3	3	3	-	-	-	3	3	3	3
PCO4	3	-	3	3	3	3	3	-	-	-	2	3	3	3
PCO5	3	-	3	3	3	3	3	-	-	-	1	3	3	3
PCO6	3	-	3	3	3	3	3	-	-	-	3	3	3	3
PCO7	3	-	3	3	3	3	-	-	-	-	2	3	3	3
PCO8	3	-	3	3	3	3	3	-	-	-	3	3	3	3
PCO9	3	-	3	3	3	3	-	-	-	-	2	3	3	3

B.Sc VI Semester (Paper II: Microbiology and Modern technique in biology -Theory)

CO1- Student will learn about Microbiology

CO2- Student will earn the knowledge of Nanotechnology

CO3- Students will understand the Concept of Bioinformatics

CO4- Student will learn about the methods in biology.

CO5- They will learn about the Research methodology

Mapping of Cos with Pos and PSO's on Theory:

Cos\POs and PSO's	Po1	Po2	Po3	Ps01	Ps02	Ps03	Ps04	Ps05	Ps06	Ps07	Ps08	Ps09	Ps010	Ps011
CO1	3	3	3	3	3	2	3	2	-	-	3	3	3	-
Co2	3	-	3	3	3	-	-	-	3	-	3	-	2	-
Co3	3	3	3	3	3	-	-	-	-	-	3	-	3	-
CO4	3	-	3	3	3	-	3	-	-	-	3	-	1	-
CO5	3	-	3	3	3	-	2	-	-	-	3	-	3	-

B.Sc VI Semester (Paper II: Microbiology and Modern technique in biology - Practical)

PCO1- Student will learn about the micrometry

PCO2- Student will prepare the liquid broth

PCO3- Students will prepare the solid media

PCO4- Student will prepare the agar slants

PCO5- Students will study the different bacteria, viruses and fungi causing diseases in man

PCO6- Students will learn about bacterial cell counting using haemocytometer

PCO7- Students will study the simple and gram staining differentiation of bacteria

PCO8- Students will study about the isolation, identification and enumeration of bacteria/protozoa from moist soil or sewage water

PCO9- Students will study the practical application of bioinformatics

PCO10- Students will study the microbiological lab equipments

Mapping of PCOs with Pos and PSO's on Practical:

Pco\POs and PSO's	Po1	Po2	Po3	Pso1	Pso2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11
PCO1	3	3	3	3	3	3	3	-	-	-	3	-	2	-
PCO2	3	3	3	3	3	-	3	-	-	-	2	-	3	-
PCO3	3	3	3	3	3	-	3	-	-	-	1	-	1	-
PCO4	3	3	3	3	3	-	3	-	-	-	3	-	3	-
PCO5	3	3	3	3	3	3	3	-	-	-	2	-	1	-
PCO6	3	3	3	3	3	-	3	3	-	-	1	-	2	-
PCO7	3	3	3	3	3	-	3	-	-	-	1	-	1	-
PCO8	3	3	3	3	3	-	3	-	-	-	3	3	2	-
PCO9	3	-	3	3	3	-	-	-	-	-	2	-	1	-
PCO10	3	3	3	3	3	-	3	-	-	-	3	3	1	-

8-10-2019


 Head of the
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 Principal,
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Evaluation Mapping

Question paper Pattern


- 2Marks- Objectives
- 5Marks- Descriptive
- 10Marks- Essay type/ Descriptive


Framing Questions


1. Skill based
2. Understanding
3. Descriptive
4. Analytical
5. Evaluated

Evaluation Mapping

S.NO	Parameters	Percentage
1.	Skill based	15%
2.	Understanding	15%
3.	Descriptive	30%
4.	Analytical	20%
5.	Evaluated	20%
		100%


Head of the
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