


Department of Zoology



List of the projects for the year - 2020-21

S/N <sup>o</sup>	Regist. No.	Class	Title of the project work
1	S1827603 to S1827828	Bsc-V Semester	Project work on (Ecology) Zooplankton in Krishna River.
2	S1827603 to S1827828	Bsc-VI Semester	Project work on Microscopy
3	S1827603 to S1827828	Bsc-VI Semester	Project work on Vermiculture

  
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# RANI CHANNAMMA UNIVERSITY, BELAGAVI

**WEL-COME**

TO THE COURSE STRUCTRE AND SYLLABUS OF UNDERGRADUATE  
PROGRAMMES – B.Sc

**V Semester**

w.e.f.

Academic Year 2019-20 and onwards

*Amrta*  
Co-ordinator,

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PRINCIPAL,



B Sc V Semester (5.1)  
Paper-I  
ZOOLOGY (optional)

(Ecology, Evolution, Paleontology, Zoogeography, Wild life Conservation)

Total-hours,50  
Marks-80

**Ecology.**

Earth as Living.-Planet. Sub divisions\_of ecology, Scope of ecology, Biosphere  
1 hr

Abiotic factors \_\_\_\_  
Light, Temperature (Effect on Animals and Plants)  
2hr

Biotic Factor  
Mutualism,Commensalism,Amensialism,Parasitism,Predation  
,Competition,Parasitism.  
2hrs

Habitats  
4hrs

**Freshwater habitat — Lotic and Lentic systems**

Zonation of Sea,Marine Biota, Esturine ecology, & Mangrooves  
Terrestrial habitat — A brief account of Biomes.

**Ecological** Adaptations — Freshwater, Marine and Terrestrial.

Biogeochemical Cycles - Principles and concepts of Water, Nitrogen, Carbon,  
2hrs

Oxygen cycles

Community Ecology-Community structure, Ecological niches, Edge effect,  
Stratification, Ecoton.  
2hrs

Population Ecology: Density, natality, mortality.Age distribution

Population growth, types and curves.  
2hrs

VI<sup>th</sup> (6<sup>th</sup>) Semester  
Syllabus



Rani Channamma University, Belagavi.

B Sc VI Semester-6.1

Paper I

Total hours-56  
Marks-80  
Theory 4hrs/week

**APPLIED ZOOLOGY (optional)**

- Sericulture: Mulberry:** 07hrs  
Silkworm and Life History of Bombyx mori.  
Rearing of Silkworm: Grainage management, Emergence of moth & fertilization, egg laying, hatching and moulting of silkworm, spinning of cocoons. Cocoon processing, stifling and spinning silk filature. Silkworm diseases-Muscardine, Grasserie, Flacherie & Pebrine. Study of Non mulberry silkworms in brief
- Apiculture:** Species of Honey Bees, their Social organization, Life History- Methods of Bee Keeping, Products of Bees, & their Economic importance. 05hrs
- Insect Pest Management:** Natural control and Applied control of pests. 04hrs  
Applied Control – Mechanical, Physical, Cultural, Legal, Chemical control & Pheromonal and Biological control & Integrated pest management. (Names of Pests mentioned in the practical should be referred.)
- Vermiculture:** Earthworm species used in vermiculture, vermiculture technique and importance of vermiculture. 04hrs
- Aquaculture:** 15hrs  
Prawn Fisheries, Species of Prawns, Culture of freshwater and marine prawns.  
Pearl Culture: Pearl producing molluscans, Pearl formation, Pearl producing sites in India. Quality and composition of Pearl. Pearl industry: Artificial insertion of nucleus. Brief technique of Fish culture. (Indian major Carps).  
Preservation & processing methods of fishes and their byproducts.
- Poultry -** 06hrs  
Breeds of fowl. Diseases of poultry, Poultry maintenance & by-products. Composition and Nutritive value of Egg.
- Animal Husbandary -** 12hrs  
Maintenance, Breeds, Diseases, Products and byproducts of the following.  
Sheep and Goats, Cow and Buffalos. Composition and Nutritive value of Milk.
- Lac culture -** 03hrs  
Classification of Lac insect (Tacharola lacca, Life history of Lac insect, Host plants. Cultivation of Lac. Composition and properties & Economic importance.



Rani Channamma University, Belagavi.  
B Sc VI semester 6.2  
Paper II

ZOOLOGY (optional)  
( Microbiology, Nanotechnology, Bioinformatics and Methods in Biology )

Total hours-56 Hrs  
Marks-80 marks  
Theory 4hrs/week

Microbiology

- |  |                 |
|--|-----------------|
| 1. <b>Microscopy:</b> Compound Microscope and its functions.<br>Dark field microscope, Fluorescent Microscope,<br>Phase Contrast Microscope and Electron Microscope and<br>their uses. | 02 hrs          |
| 2. <b>Sterilization and other Techniques</b> - Physical and Chemical methods.<br>Bacteria – Classification based on shapes, Structure (anatomy). Bacterial<br>Reproduction and growth. | 02 hrs<br>02hrs |
| 3. <b>Virus</b> - Morphology, chemical properties, classification and nomenclature.<br>DNA and RNA viruses.  | 02 hrs          |
| 4. <b>Fungi</b> – Structure, classification and reproduction. Yeasts.  | 01 hr           |
| 5. <b>Fermentation:</b> Types of Fermentor and basic functions. Methods of<br>preservations & criteria for the selection of microorganisms   | 03 hrs          |
| 6. <b>Production of antibodies</b> Penicillin, Streptomycin, Enzyme protease,<br>Riboflavin.   | 02 hrs          |
| 7. <b>Normal microbial flora</b> of the human body,  | 1 hr            |
| 8. <b>Role of microbes</b> in environment  | 01 hr           |

Nanotechnolog

- |   |        |
|---|--------|
| Introduction: History, Name the Tools and Techniques in Nanotech.   | 02 hrs |
| Nanobiology: Applications of Nano in biology.   | 01 hr  |
| Nanomedicines: Nano drug Administration, Diagnostics and Therapeutic<br>Applications in Green Nanotechnology in brief – Lotus effect, Gold &<br>Silver nano particles, Curcumin phytochemicals & Cinnamon nano particles. | 02 hrs |



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**DEPARTMENT OF ZOOLOGY**

**A Project Work**

**CERTIFICATE**

Reg: **51827614**

Class: **BSc VI Sem**

This is to certify that Mr./Miss **Akshoda, R. Kumbhar** of  
BSc Vth Semester, MGVC College Muddebihal has satisfactorily completed the Project  
work on **Microscopy** under our supervision during the year 2020-2021

Staff Member in charge

Head of the

Department

Examiners, 1)

2)

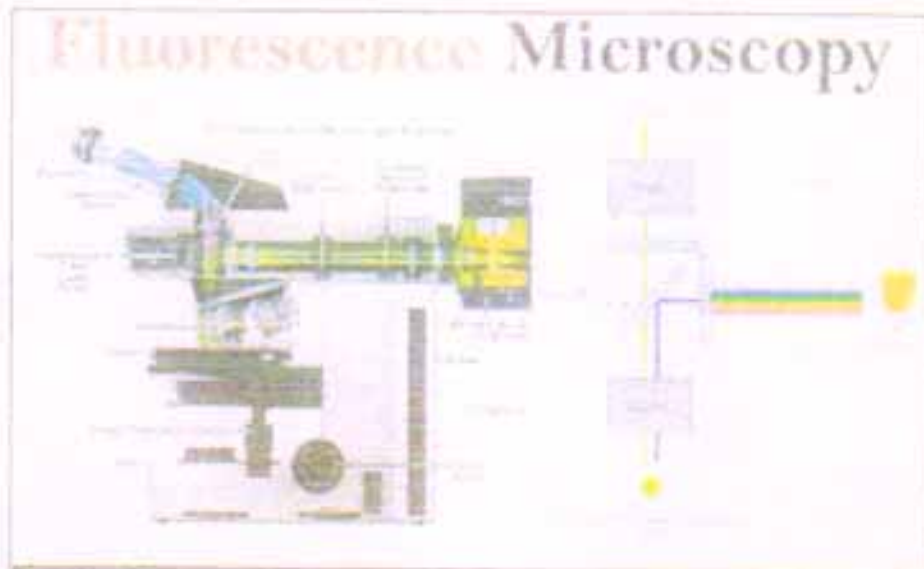
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A  
REPORT  
ON  
MICROSCOPY



## FLUORESCENT MICROSCOPE

This microscope is based on the principle of fluorescence.

**Fluorescence:** The substance which emit visible light when illuminated by ultraviolet rays. The fluorescence is of two types. They are autofluorescence and secondary fluorescence. The fluorescence emitted by the substances themselves is called autofluorescence. Eg., chlorophyll, porphyrin, riboflavin, Vitamin A etc. The fluorescence emitted by nonfluorescent substances is called secondary fluorescence. The non fluorescence substances emit fluorescence when they are combined with fluorescent dyes called fluorochromes. The fluorochromes are fluorescein emitting yellow-green light and rhodamine emitting orange red light. The increased resolution of the electron microscope is possible because the path of electrons can be resolved to much smaller distance than light. In practice, a resolution of 10 Å is common. And greater resolution (to 2Å) is possible with special technique.

Instead of using visible to illuminate the object (as used in light microscope), the electron microscope uses a beam of accelerated electrons

and it focusses the electron beam with electromagnets (magnetic lenses). An image is formed when electrons strike a fluorescent screen or when





## ELECTRON MICROSCOPE

Electron microscope was developed 1930s. It is a powerful tool for studying the ultrastructure of cells because it has much greater resolving power than the light microscope.

Basically there are two types of electron microscope such as Transmission electron microscope (TEMs) form images from electrons that have bounced off the surface of the specimen. A transmission electron microscope has a very high magnification (500,000 times). The resolution TEM was designed by Knoll and Ruska of Germany in 1932. It permits direct study of biological ultrastructures of cell organelles. The practical limit of resolution of electron microscope is about 3 to 5 nm.

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**DEPARTMENT OF ZOOLOGY**

**A Project Work**  
**CERTIFICATE**

Register No: **51827608**

Class: **BSc VI Sem**

This is to certify that Mr./Miss. **Aishwarya. Sajjan**  
of BSc VIth Semester, MGVC College Muddebihal has satisfactorily  
completed the Project work on **Vermiculture** under our supervision  
during the year 2020-2021

Staff Member In charge

Head of the

Department:

Examiners: 1)

2)

  
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# Vermiculture Field



# Eudrilus eugeniae





## Harvesting



- ❖ Harvesting is the process of collecting the vermicompost. When the vermicompost is ready for use the top layer appears brownish in color with granular appearance.
- ❖ Take out the mulch layer & expose the vermibed to out environment.
- ❖ Stop watering the vermibed for 3-4 days.
- ❖ Collect the vermicompost in number of small hips & leave in the vermibed itself.
- ❖ Next day the vermicompost is harvested & seed.
- ❖ Vermicompost is shade dried.
- ❖ Packed in plastic coated bags.







## vermiwash as fertilizer



Their excess water pured into the pit washes the earth worm body & skin & the water collected in pot is called vermiwash .At about 45 days we get vermiwash. Vermiwash is a pale yellow colored transparent coelomic fluid obtained from earthworms. It contains, micronutrients from the soil, along with the mucus, secretion & excretory materials of the worms. It's believed to contain antibiotic & antiviral property. It's generally used as fertilizer in aquatic productivity.

## Uses of vermiwash

-  It induces flowering.
-  It induces plant growth.
-  It induces yield.
-  It gives protection against pest & diseases.



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**DEPARTMENT OF ZOOLOGY**

Register No: S1827633

Date : \_\_\_\_\_

**CERTIFICATE**

This is to certify that Mr/Miss. Ashwini Lamani of BSc. Vth Semester has satisfactorily completed A Project work on ZOOPLANKTON IN KRISHNA RIVER near Almatti village under our supervision in MGVC College Muddebihal during the year 2020-2021

  
Staff member in charge

Examiners :

1.

2.

  
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A  
Project Report  
on  
Zooplankton



## Acknowledgement

I would like to convey my sincere gratitude to Prof.R.G.Vastrad Department of Zoology, MGVC College Muddebihal who has given me an opportunity and useful guidance to undertake this project work.

I am also thankful to Smt. K.G.Hiremath Professor Department of Zoology MGVC College Muddebihal for her valuable suggestions, co-operation in preparation of the project .

I offer my gratitude to Smt. R.M.Bukitagar lecturer Department of Zoology MGVC College Muddebihal for her valuable support, encouragement and guidance in completing this project report.

Place: Muddebihal

[Ashwini. Larnani]



# Amoeba

