

Department of ZOOLOGY

- a) Enclose copy of curriculum **ENCLOSED**
 b) List of the practical experiments in the curriculum actually done by the students and practical demonstrated.

Sl. No.	Name of the experiments	[B.Sc.- I Year]
1	Major & Minor Dissections -	Through Alternative method :
	Earthworm - Digestive & Reproductive systems	Printout labelling
	Cockroach - Digestive system & Mouth parts	Clay Modelling
2	Exercise based on Adaptation -	
	Adaptive characters - Aquatic/Aerial/ Terrestrial	Through Models & Field work
	Pond Ecosystem & Freshwater/Grassland adaptations.	
3	Cytological Exercise -	
	Squash prepn. Of Onion root tip	Through Experiment & Permanent Slides
	Buccal epithelial cells	
4	Study of stages of Cell division	
	Spots -	
	Invertebrates & Vertebrates, Osteology - Frog & Rabbit	Through Museum Specimens, Permanent slides, Bones
5	Chick Embryology & Frog Embryology, Mammal Histology & Cytology	
	Mounting -	
	Glycerine mount of the Mounting material	
Sl. No.	Name of the experiments	[B.Sc.- II Year]
1	Major & Minor Dissections -	Through Alternative method :
	Afferent & Efferent Branchial vessels - Scoliodon	Printout labelling
	Cranial nerves & Internal Ear -Scoliodon	Model making
		Diagrammatic representation
2	Spots -	
	Representative examples of Chordates	Through Museum Specimens, Permanent slides, Models, Bones
	Histology	
Limbs, Girdles, Vertebrae - Frog, Fowl, Varanus & Rabbit		
3	Microscopic Techniques -	
	Microbiological techniques	Through unstained or stained permanent mounts

	Fixation & Staining	
4	Life cycle study - Silkworm & Honey bees	Through Models and Virtual modes
5	Social Organisation - Honey bees Termites or Ants	Through Models and Virtual modes [VLs], Field work
Sl. No.	Name of the experiments	[B.Sc.- III Year]
1	Haematological Experiments - Blood group detection RBC & WBC count Prepn. Of Haematin crystals	Experiments are performed using fresh reagents and in presence of Technician from reputed pathology Lab.
2	Ecological Experiment - Estimation of Population Density Humidity gradient Analysis of producers & consumers Grassland ecosystem/ Pond ecosystem	Through Models, Experiments in Lab & Field work
3	Cytological Experiment - Study of Mitosis in Squash prepared of Onion root tip Mitosis & Meiosis stages	Through Squash prepn. & Permanent slides
4	Biochemical Experiment - Carbohydrates / Protein/Fats or Lipids	By using appropriate material and reagents.
5	Spots & Instrumentation -	

	Study of parasites & vectors	Through permanent slides & Collection
	Working principals & Apparatus of PH meter /Colorimeter/Paper Chromatography	Through apparatus working
	Different Microscopes	VLs

c) When was the last exercise for curriculum revision undertaken?

As per the amendments made by affiliating University's Board of Studies.

d) Specialization of the course - **NIL**

e) No. of SoP's created Kits for practicals – **NIL**

Zoology
B.Sc. Part I (2019-20)
Practical

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show knowledge of the following:-

- Dissection of Earthworm, Cockroach, Palaemon and Pila
- Minor dissection—appendages of Prawn & hastate plate, mouth parts of insects, radulla of Pila.

(Alternative methods: By Clay/Thermacol/drawing/Model etc.)

- Adaptive characters of Aquatic, terrestrial, aerial and desert animals.
- Museum specimen invertebrate
- Slides- Invertebrates, frog embryology, Chick embryology and cytology.

Scheme of Practical Exam

Time: 3hrs

1. Major Dissection	10 Marks
2. Minor Dissection	05 Marks
3. Comments on Excercise based on Adaptation	04 Marks
4. Cytological Preparation	05 Marks
5. Spots-8 (Slides-4, Specimens-4)	16 Marks
6. Sessional	10 Marks

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14.6.19

NS
14.06.19

Jan
14.6.19.

(Before 2019)

UNIFIED SYLLABUS
ZOOLOGY
PRACTICAL WORK
B. Sc.—Part I

[M. M. : 50

The practical work will, in general be based on the syllabus prescribed in theory and the candidates will be required to show a knowledge of the following :

1. Dissection of Earthworm.
2. Dissection of Cockroach, *Palaemon* & hastate plate, *Pila*.
3. Minor Dissection – Appendages of Prawn, Mouth-parts of Insects, Radula of *Pila*.
4. Mounting – Setae, Spermathecae, Septal Nephridia, Nerve ring & ovary of earthworm/Parapodia of *Nereis* Salivary gland of Cockroach, Ctenidium of *Pila*, Malpighian tubules.
5. Cytological preparation – Onion root-tip “Squash preparation” for mitosis/Grasshopper testis squash for meiosis.
6. Osteology – Frog & Rabbit.
7. Museum Specimen invertebrate & Vertebrate, Frog embryology.
8. Slides – Chick embryology, Cytology, Mammals Histology, Bird feathers & Invertebrate Slides.

पाठ्यक्रम

प्रायोगिक जन्तु विज्ञान (छ.ग.)

बी.एस-सी. द्वितीय वर्ष

समय: 3 घण्टे

पूर्णांक: 50

PRACTICAL SCHEME

S.No.	Particular	Marks
1.	Major dissection (Cranial nerves/Efferent branchial vessel)	12
2.	Minor dissection (Afferent branchial/Internal ear)	08
3.	Permanent mount	05
4.	Spotting-8 (Slides-4, Specimens-2 and Bones-2)	16
5.	Viva	05
6.	Sessional marks	04
Total Marks		50

The practical work in general shall be based on the syllabus prescribed in theory. The students will be required to show the knowledge of the following :

1. Study of the representative examples of the different chordates (Classification and Character)
2. Dissection of various systems of Scoliodon—Afferent and Efferent branchial vessels, cranial nerves, internal ear.
3. Simple microscopic technique through unstained or stained permanent mounts.
4. Study of prepared slides histological, as per theory papers.
5. Study of limb girdles and vertebrae of Frog, Varanus, Fowl and Rabbit.
6. Identification of species and individuals of Honey bee.
7. Life cycle of Honey bee and Silkworm.



प्रायोगिक जन्तु विज्ञान
बी.एस.-सी. तृतीय वर्ष

1.	Haematological Experiment : (R.B.Cs./ W.B.Cs. Counting/ Blood group detection)	08
2.	Ecological Experiment : (Estimation of Population density/ Frequency/ Relative density)	06
3.	Staining of Gram +ve and Gram -ve Bacteria/Cytological Experiment : Mitosis in onion root tip	05
4.	Biochemical Experiment : (Biochemical detection of Carbohydrate/Protein/ Lipid)	06
5.	Chromatography.	05
6.	Spotting : Study of permanent slides of Parasites : 3 Comments on working Principles of pH meter/ Colorimeter/ Centrifuge and Microscope	10
7.	Viva voce	05
8.	Sessional	05
Total Marks		50

PRACTICAL WORK

The practical work in general shall be based on syllabus prescribed in theory.

The students will be required to show knowledge of the following :

1. Estimation of Population density, Percentage frequency, Relative density.
2. Analysis of Producers and Consumers in grassland.
3. Detection of Gram-negative and Gram-positive bacteria.
4. Blood group detection (A,B, AB and O).
5. R.B.C., W.B.C. count.
6. Blood coagulation time.
7. Preparation of Hematin crystals from blood of rat.
8. Observation of Drosophila, wild and mutant.
9. Chromatography Paper or Gel.
10. Calorimetric estimation of haemoglobin.
11. Mitosis in onion root tip.
12. Biochemical detection of Carbohydrate, Protein and Lipid.
13. Study of Permanent slides of Parasites, based on theory paper.
14. Working Principles of pH meter, Colorimeter, Centrifuge and Microscopes.