



RANI CHANNAMMA UNIVERSITY, BELAGAVI

WEL-COME

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

IV Semester

w.e.f.

Academic Year 2015-16 and onwards

Semesters	Syllabus	Total Hours	Theory & Practical/ Week
IV	Cell Biology, Histology & Animal Behaviors	50hrs.	4 hrs.
	PRACTICAL	12	4 hrs.

NOTE:

THEORY MARKS			PRACTICAL MARKS		
Internal	Annual	Total Marks	Internal	Annual	Total Marks
20	80	100 marks	10	40	50 marks

Question paper pattern for THEORY examination

Que.No.	Marks	Solve	Total Marks
I	02	10	20
II	04	05	20
III	10	04	40
TOTAL --- 80 MARKS			

PRACTICAL pattern for examination

Que.No.	Solve	Total Marks
I	Make a temporary preparation of Histology slide.	10
II	Make a temporary squash preparation of Onion root tip/Grasshopper Testis/Onion flower bud	08
III	Identification (6X2)	12
IV	Field study report & viva	05
V	Journal	05
TOTAL --- 40 MARKS		

UNIT-I Cell Biology

Cell Biology: Ultra structure of animal cell, Cell theory & cell cycle.	1hr
Ultra Structure & function of cell organelles: Plasma membrane, Endoplasmic reticulum, Ribosome's, Golgi-complex, Lysosomes, Mitochondria and Nucleus.	8hrs

UNIT-II Cell Biology

Chromosomes: Structure & types of chromosomes. Ultra structure of chromosome.	2hrs
Cell division: Types- mitosis & meiosis.	2hrs
Cellular Aging & Cell Death: Concept of Aging theories, Effect of Aging on Cell organelles. Apoptosis, Necrosis-Definition & significance.	2hrs
Cancer Biology: Introduction, Characteristics of cancer cells. Carcinogens, cause & prevention.	3hrs

UNIT-III Histology

Histo chemical Techniques: Cytoplasmic & Nuclear stains. Preparation of histological slides.	3hrs
A). Study of histological structure and functions of the following Mammalian organs. a). Tongue b). Salivary glands c). Stomach d). Intestine e). Liver f). Kidney	8hrs

UNIT-IV Histology

B). Study of histological structure and Endocrine functions of the following Mammalian organs a) Pituitary b) Pancreas c) Adrenal d) Thyroid e) Parathyroid f) Thymus g) Testes h) Ovary	9hrs
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UNIT-V Ethology (Animal Behaviour)

Ethology: Introduction Definition, Scope of ethology. Brief Contributions of Konard Lorenz, Niko Tinbergen and Karl Von Frisch.	2hrs
Types of Animal Behaviour: 1). Innate Behaviour: Taxes, Reflexes, Instincts & Motivation. 2). Learned Behaviour: Habituation, Imprinting, Conditioned, Reflexes and Insight learning. 3). Social behaviour: Types of animal society & Colony in Honey Bees and Monkey troops. 4). Territoriality & Courtship Behaviour in Scorpion, Stickle Back Fish & Peacock. 5). Study of nesting behavior and mimicry in animal. 6). Biological clock, Circadian rhythm and Chronobiology.	7hrs
Animal Communication: Chemical, visual and Audio. Function of	

Signals odours, sounds and light.	2hrs
Parental care: Concepts, Fishes, Amphibians and Birds.	3hrs

PRACTICALS

	Total Practicals-12 hrs
1) Study of permanent cytology slides of Mitosis & Meiosis.	2hrs
2) Study of temporary preparation of Mitotic stages from onion Root tip cells.	2hrs
3) Study of temporary preparation of Meiotic stages from onion Flower bud/Grass Hooper testis.	2hrs
4) Preparation and observation of permanent histological slides Stomach, Intestine, Liver, Pancreas, Kidney, Adrenal Thyroid, Testis & Ovary.	4hrs
5) Study of mimicry in leaf insect, Chameleon, Butterflies, Stick Insect, Ants, Wasps and Spiders.	1hr
6) Study of Nest and nesting material.	1hr
7) Internal Practical Test	1hr

NOTE:

1. With the help of Charts/Models/Diagrams/Printouts & Xerox Sheets are used in practical demonstration
2. Compulsory field visit to study Mimicry, Habitats and Community.
3. Submission of field visit report carries 5 marks.

REFERENCE BOOKS

1. Introduction to Histology. Gauba R.K. Tata Mc Graw Hill New Delhi.
2. Cells and Tissues: Introduction to Histology ND Cells :Rogers:A.W. AcademicPress .
3. Basic medical Histology :Biology of cells & tissues & organs Kessel R.G. oupNew York.
4. Text Book of Histology :Bloom and Fawcett.Saunders Publ.Philadelphia.
5. Bailey's Text Book of Histology.Bailee Baltimore,Willims andWilkins.
6. Text Book of Ecology : Odum.
7. Introduction to animal behavior:Aubrey Manning and Marian.S.DawkinsCambridge Uni Press.
- 8.Essentials of organizational behavior:Stephan Robbins,Prentice Hall of IndiaNew Delhi.
9. Animal Behaviour :McFarland D ELBS with Longman.
10. Ethology " Barnett.
11. An introduction to Behavioural Ecology J.R. Krebs & N.B. Davies Black wellScientific Publ.
12. Text Book of Animal Behaviour: Fatik Baran mandal. PHI Learning Pvt Ltd newDelhi.
13. Animal Behaviour :Reena Mathur,Rastogi and Coimpani.
14. Cell Biology –Chennarayappa – Unniversity Press