

GONDWANA UNIVERSITY GADCHIROLI
SEMESTER SYSTEM SYLLABUS
FOR
B.Sc. Part II
Subject- Zoology
Semester III – Paper I
Life and Diversity of Animals
(Chordates)

Unit- I	Periods
Pisces –Salient features of Chondrychthyes and Osteichthyes.	2
Labeo rohita : External morphology, Digestive, Circulatory and Respiratory systems. Economic importance of fishes. Fish Migration and Accessory Respiratory organs.	10
 Unit-II	
Amphibia – Classification, Parental care and Neotony.	4
Reptilia - Classification based on temporal vacuities.	3
Snake venom, Poision apparatus & Biting mechanism	5
 Unit-III	
Birds – Origin of birds	3
Types of feathers	1
Flight adaptations (Morphological, Anatomical and Physiological)	4
Migration and its significance	3
Ratitae and Carinitae	1
 Unit-IV	
Mammals – General characters of Prototheria, Metatheria and Eutheria	6
Comparative account of Aortic arches and Heart.	6

Semester - III
DEVELOPMENTAL BIOLOGY
Paper-II

Unit-I	Periods
Types of eggs- classified on the basis of amount and distribution of yolk. Chemical composition of yolk. Mechanism and significance of Fertilization.	5
Parthenogenesis- Definition, types and its significance.	3
Cleavage- Types of cleavages	2
Blastulation- Definition and types of blastulation.	2
Unit-II	
Morphogenetic movements in the early development of frog (Invagination, Epiboly, Emboly, Involution, Ingression and Delamination).	6
Development of chick up to the formation of Primitive streak	3
Development of Extra embryonic membranes in chick and their Significance.	3
Unit-III (Mammalian development)	
Gametogenesis- (Oogenesis and Spermatogenesis).	4
Structure of Sperm and Ovum.	2
Implantation- Definition and types.	2
Placentation- Definition, Types (Based on the Morphological and histological structures). Functions of placenta.	4
Unit –IV	
Stem Cells- Totipotancy, Sources, Types and their use in human welfare.	4
In Vitro Fertilization (Test tube Baby)- Technique advantages and disadvantages.	4
Semen Bank, Artificial Inseminations and Contraceptives	4

PRACTICALS
B.Sc.II (Zoology), Semester-III

Laboratory practical course and examination pattern is given below:

- 1. Identification, Classification** : distinguishing characters and adaptive features of
a) Fishes : *Pristis, Torpedo, Notopterus, Exocoetus, Clarius, Ophiocephalus, Catla, Rohu, Mrigal.*

- b) Amphibia : *Bufo, Salamander, Ichthyophis*
- c) Reptilia : *Chameleon, Varanus, Pharynosoma, Draco, Tortoise, Cobra, krait, Russill's viper, Echis, Sea snake*.
- d) Birds: Owl, Woodpecker, Kingfisher, Kite, Duck, Parrot.
- e) Mammals: Squirrel, Mongoose, Bat, Loris, Rabbit.

2. Anatomical Observations

Anatomical observations, demonstration and detailed explanation of the following with the help of ICT tools/ models/ charts/ photographs etc. (Any fish)

- i. Digestive system
- ii. Reproductive system
- iii. Brain and Cranial Nerves

3. Study of skeleton of Rabbit/ Fowl

(Loose bones of skull not to be studied)

4. Developmental Biology –

Study of the following slides-

- 1. Study of permanent slide of Frog embryology, Chick embryology (18 hrs, 24 hrs, 30 hrs, 36 hrs, 72 hrs)

5. Study of permanent slides-

V.S. skin of Frog and Mammal

- 6. Study of permanent Preparation of the following with the help of already available permanent slides ICT tools/ models/ charts/ photographs etc.

Fish scales – placoid, cycloid, ctenoid
 Hyaline cartilage and striated muscle

7. Collection, study tour and submission of report

Distribution of Marks –

1. Anatomical observations	10
2. Spotting- (4 specimens, 4 slides, 2 bones).	10
3. Permanent stained micro preparation	4
4. Class record,	3
5. Submission of slides and study tour report	3

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