

**V SEMESTER PRACTICALS-V (5.9 A)
BASED ON GENETICS AND EVOLUTIONARY BIOLOGY
CREDITS-2 15 Units**

- 1 Study of Mendelian inheritance(Monohybrid and Dihybrid crosses -4 problems
Gene interactions(Blood groups, Sex linked inheritance) -4 problems
- 2 Drosophila Genetics :a)Male and Female Identification b) Syndrome Identification
- 3 Study of Human Karyotypes: Normal and Abnormal(Turner's, Klinefelter's, Down's and Cri-du-Chat syndrome
- 4 Study of a) Homologous organs b) Analogous organs with suitable specimens/pictures
a) Mouthparts of cockroach and Female mosquito
b) Wing of Bird, Wing of Insect and Patagium of Bat
- 5 Study of Vestigial organs from suitable specimens/pictures.
(Vermiform appendix, Wisdom tooth and Coccyx)
- 6 Study of Fossil evidences from suitable specimens/Pictures:
Ichthyosaurus, Brontosaurus, Stegosaurus and Archeopteryx
- 7 Charts:
a) Identification and comment on fossil records of Man- Pictures
Ramapithecus, Australopithecus, Pithecanthropus erectus, Pithecanthropus pekinesis, Neanderthal man, Cromagnon man.(Any three)
- b) Identification and comment on fossil records of Horse- Pictures
Hyracotherium, Mesohippus, Merychippus, Plihippus, Equus.(Any three)
- 8 Submission on Project report on
 - 1) Evolution of Elephant.
 - 2) Evolution of Camel
 - 3) DNA Finger printing or Human Genome Project
 - 4) Application of Genetic engineering in Agriculture, Pharmaceuticals and Food technology
 - 5) Dinosaurs
 - 6) Fossils

**V SEMESTER PRACTICALS-V (5.9 A)
BASED ON GENETICS AND EVOLUTIONARY BIOLOGY
SCHEME OF EXAMINATION**

DURATION:3 Hours

MAX.MARKS:50

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| Q 1. Problems on a) Monohybrid or Dihybrid crosses (one problem)
b) Blood groups or Sex linked inheritance(one problem) | 04Marks
05Marks |
| Q 2 Drosophila Genetics :a)Male and Female Identification 2 ½
b) Syndrome Identification 2 ½ | 05Marks |
| Q 3. Identify and comment -Human Karyotypes(Normal and Abnormal) | 2x4= 08 Marks |
| Q 4. Identify and comment
a) Homologous or Analogous or Vestigial organs (Any one)
b) Study of Fossil evidence: picture or model (Any one) | 3x2= 06 Marks |
| Q 5. Identify and Comment on(Pictures)
a) Phylogeny of Man (Any two)
b) Phylogeny of Horse(Any two) | 3x2= 06 Marks
3x2= 06 Marks |
| Q 6. Submission of Project report | 05 Marks |
| Q 7. Class records | 05 Marks |

VI SEMESTER PRACTICAL-VII 6.9A
 BASED ON APPLIED ZOOLOGY

2 CREDITS 15Units

- 1 Identify and Comment on following Bacterial strains: Salmonella typhi, Mycobacterium tuberculosis, Borrelia recurrentis, Treponema pallidum, Rickettsia prowazekii- through photographs/ slides/charts
- 2 Study of Helminthes worms: Ancylostoma duodenale, Wuchereria bancrofti and Schistoma haematobium
- 3 Study of Morphology of Bombyxi mori (Egg, Larva, Pupa and Moth).
- 4 Study of Silk glands of Bombyxi mori. (Photos/Picture/Specimens)
- 5 Identify and Comment on Food fishes of Karnataka
 (Catla catla, Clarias, Labeo and Saccobranchus)
- 6 Identify and Comment on Breeds of fowl. (Photos/Picture)
 (White horn, Plymouth rock, Sussex, Langshan and Giriraja)
- 7 Estimation of protein in Milk sample.
- 8 Lactometer test for water content. Exp.
- 9 Project on Dairy farming, Breeds of Cattle, Diseases of Cattle, Pisciculture, Poultry farming. Transgenic animals.

Photography

VI SEMESTER PRACTICAL-VII 6.9 A
 BASED ON APPLIED ZOOLOGY
 SCHEME OF PARCTICAL EXAMINATION

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| Q 1: Identify and comment on any two bacterial strains (Photos/Slide) | A & B | MAX. MARKS: 50
2x3=06 Marks |
| Q 2: Study of Helminthes worms any one (Specimens/Photos) | C | 03 Marks |
| Q 3: Study Morphology of <u>Bombyxi mori</u> (Any one of stage mentioned) | D | 03 Marks |
| Q 4: Study of Silk glands of <u>Bombyxi mori</u> (Specimen/ Photo) | E | 04 Marks |
| Q 5 Identification of food fishes of Karnataka (Specimen/ Photos) | F, G, Any two | 2x4=08 Marks |
| Q 6: Identification and Comment on breeds of Fowl (Any two) | H, I | 2x4=08 Marks |
| Q 7: Estimation of protein in Milk sample (Titration method) | | |
| OR | | |
| Lactometer test for water content | | 0 8 Marks |
| Q 8: Project report on Dairy farming, Breeds of Cattle, Disease of Cattle,
Pisciculture, Poultry farming and Transgenic animals: | | 05 Marks |
| Q 9: Class records | | 05 Marks |

VI SEMESTER PRACTICAL-VIII(6.9)

Practical VI Environmental Biology and Ethology

2 CREDITS

15 Units

Q1) Environmental Biology Experiments:

Estimation of A) Dissolved Oxygen B) Dissolved Organic Matter
C) Salinity D) Free Carbon dioxide E) Hardness F) Alkalinity G) p^H

Note:

- Any 4 Experiments to be performed.
- A to F by Titermetric method.
- p^H , Using p^H -meter, p^H paper.

Q2 Ecological adaptations [Taxonomy, diagram and comment] Any five groups

- ✓ A) Tubicolous worms: Arenicola, Chaetopterus.
- ✓ B) Burrowing forms: Dentalium, Balanoglossus and Amphioxus.
- ✓ C) Sedentary forms: Sea anemone, Ascidia.
- ✓ D) Passive flight adaptation: Exoceteus, Draco and Rhacophours.
- ✓ E) Parasitism: Tapeworm, Sacculina on Crab.
- ✓ F) Mimicry Camouflage: Stick insect, Chameleon.
- ✓ G) Desert form: Pharynosoma, Camel [Picture or Photograph].

Q3) Identification of Endangered Species.

Taxonomy, diagram and comment. (Any four of the following)

- 1) Red Panda 2) One horned Rhinoceros 3) Ridely Turtle 4) Monitor Lizard
5) Great Indian Hornbill 6) Salim Ali's Fruit bat
- p. photograph*

Q4) Ethology: SPOTTINGS

- A) Termite colony
 - B) Honey bee colony
 - D) Monkey
- photograph*

Q5) Submission of Project report:

- 1) Rain water harvesting 2) Migration in Salmon and Eel.
- 3) Visit to Zoo/Sanctuary/ National park (Study tour)
- 4) Visit to Coastal regions for collections of specimens and to study coastal diversity of fauna.
- 5) Eco-behavioural adaptations: Deep Sea fishes, Bioluminescence in fishes or any other animal. Flight Adaptations in Birds, Any Desert fauna, or Any Mammalian fauna.

