

VEER NARMAD SOUTH GUJARAT UNIVERSITY

F. Y.B.Sc. (BIOLOGY)

PAPER - II (ZOOLOGY) (2006)

UNIT -1

- (1) Scope and branches of zoology.
- (2) Life processes:
 - (a) Nutrition and its control- ingestion; digestion, absorption, assimilation and egestion. Control of metabolism at gene, hormone and enzyme level in the cell. Feedback mechanism.
 - (b) Reproduction:
Sexual reproduction and its hormonal regulation in Vertebrates.

UNIT - 2

Animal Diversity:

General morphology and functional anatomy of the following.

- (1) Earthworm (2) Rabbit (except skeletal system).

UNIT -3

Histology and Cytology:

- (a) Structure of connective tissue and nervous tissue.
- (b) Structure prokaryotic and eukaryotic cells (animal cell organelles) .

UNIT -4

Environmental Biology and Human welfare

- (1) Adaptations of animals-arboreal, aquatic, volant and desert.
- (2) Pollution - air, water and soil.
- (3) Wild life sanctuary and national parks -introduction, importance, causes of depletion and conservation. Sanctuary and national parks located in Gujarat -Gir national park, marine national park and nal sarovar bird sanctuary.
- (4) Human diseases- Aids, Typhoid, Cholera, Filariasis and Malaria.

UNIT -5

Applied Zoology:

- (1) Poultry: introductory idea of poultry birds, poultry farm management with reference to various methods of bird keeping, appliances-brooder, feeder and water appliances. Poultry excreta as manure, Egg as a nutritive food, Care of egg laying hen, effects of light on egg laying hen.

- (2) (a) Biotechnology: Introduction, scope, techniques of tissue and organ culture in-vitro, gene cloning.
- (b) Gene concept, genetic mapping, basic concepts of genetic engineering, recombinant DNA (including vectors) and human genome project (introduction only).
- (3) Fisheries:
 - (a) Introduction of marine and fresh water fisheries of Gujarat.
 - (b) Prawn fisheries, pearl oyster fisheries and Bombay duck fisheries.

UNIT -6

- (1) Evolution: ethology and evolution; introduction to ethology, patterns of behavior, approach to the study of behavior, social behavior with example of honeybee.
- (2) Study of Homologus & Analogus organs.

.....

VEER NARMAD SOUTH GUJARAT UNIVERSITY

F. Y.B.Sc. (BIOLOGY)

Practical-II (2006)

(1) Study of scope and branches of zoology.

(2) Study of various parts of microscope & its use (Method to use microscope).

(3) Life processes:

[i] To study the control of food ingestion in animals & T.S. of intestine of mammals to show villi for absorption with the help of charts & slides.

[ii] Study of signetring stage & amoeba stage of plasmodium with the help of permanent slide.

(4) Earthworm:

Study with the help of permanent slides- T.S. through pharyngeal region, T.S. through Gizzard, T.S. through typhlosolar region, whole mount of testis, ovary, nephridia, setae, spermatheca and blood glands.

(5) Dissection:

Earthworm

Study of external characters. Dissect the animal so as to expose its Digestive system, Reproductive system & Nervous system. Make temporary mounting of Setae, Spermatheca, Blood gland, Ovary & Septal Nephridia.

(6) Rabbit:

[i] Digestive system [ii] urinogental system [Hi] Respiratory system [iv] Heart
To be shown in dissected animal.

(7) Tissue system:

Study of various types of tissues with the help of permanent slide:- Cardio muscles, Areolar tissue, Adipose tissue, Hyaline cartilage, Bone, medulated nerve fiber & non-medulated nerve fiber of mammals.

(8) Environmental biology:

Ecological adaptations of:

[I] Arboreal: - Chamaeleon, Squirrel.

[ii] Aquatic:- Suckerfish, Flatfish

[iii] Volant:- Draco, Exocoetus.

[iv] Desert:- Phrynosoma, Uromastix.

(9) Study of Air, Water & Soil pollution with the help of charts/ models.

(10) Study of human diseases with the help of charts/ permanent slides:

[i] Aids [ii] Typhoid [iii] Cholera [iv] Filaria [v] Malaria.

(11) Wild life Biology:- To study with the help of charts, models/ photographs of examples;
[a] National Parks & Sanctuaries of Gujarat. (eg. Lion)
[b] Marine National Park (eg. Sponges, Corals, Sea horse & Star Fish)
[c] Nal sarovar Bird Sanctuary (eg. Egrets, Ducks, Pelican, Saras)

(12) Study of Poultry appliances:- Brooder, Feeder, appliances of water and candling of eggs.

Evolution: Study of homologous & analogous organs.

(13) Fisheries: Pearl oyster, Bombay duck, Prawn, Shark, Electric ray, Anabas, Rohu, and Catla.

The candidate shall record practicals in the journal and this will be signed regularly by the member of the laboratory staff. The candidate shall have to produce certificate from the senior member of the in biology that he/she has carried out the experiments satisfactorily. The journals should be produced at the time of examination and this shall be taken into consideration while assigning marks.

Reference Books

- [01] Jeevignan part- 1& n [Gujarat education-V.C.Shah, P.Y.Parmar, N.M.Shah)
- [02] Prani Vidya for F.Y.B.Sc-Chhatwani D.R., Shah A.I., Naik V.J., Dholakia A.H., Das Dhaval [03] Textbook of animal physiology & ecology-Itte Sambasiviah, M.P.Kamlakar Rao, S.Augustine Chellappa.
- [04] Modern Zoology-Gupta & ramesh.
- [05] A text of histology-Berry AX.
- [06] Animal ecology-Singh A.K.
- [07] Ecology- Kotpal R.I.
- [08] Economic Zoology- Shulda G.S. & Upadhyay V.E.
- [09] Economic Zoology-Hasan Javaid & Sinha S.P.
- [10] Livestock & Poultry production- Singh Harbans, Earle & moora.
- [11] A Textbook of Biotechnology -Gupta
- [12] Poultry Vignan (Gujarat) Mehta & Ghasura
- [13] Concept of Genetics-Kotpal P.L.
- [14] A Text book Genetics- Rastogi V.B.
- [15] Organic Evolution-Arora M.P, Satyanarayan K.L.
- [16] Utkmanti [Gujarat]-Bhavshar M.C.
- [17] Janin Vignan [Gujarati]-Patel K.R., Dave H.R.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

F.Y.B.Sc.

BIOLOGY PRACTICAL (ZOOLOGY)

(In force from April/May- 2006)

- Q.2 (A) Dissect the given animal so as to expose _____ system and show it to the examiners. (10)
- (B) Make temporary preparation of _____ from the given animal. Stain if necessary and show slide to the examiner. (5)
- (C) Prepare a slide of your blood to perform an experiment to show the clotting time of your blood/ Prepare a slide of Haemin crystals / Prepare a smear of your blood to show R.B.C. and W.B.C. / Find out your blood group and Rh - factor. (5)

Q.3 Section - II (12)

- (1) Identify & describe its ecological adaptations.
- (2) Identify & describe its ecological adaptations.
- (3) Identify and describe its histological structure.
- (4) Identify and classify giving reasons.
- (5) Identify and state relation to mankind.
- (6) Identify and describe.

Q.4 Journals (6)