

BSC ZOOLOGY V SEMESTER
[[July 2020- December 2020 (ESE Winter 2020)]]

CODE	DESCRIPTION	PD/W	EXAM	CIA	ESE	TOTAL
BSZO 511	ANIMAL PHYSIOLOGY	3	3hrs	20	80	100
BSZO 512	ECOLOGY	3	3hrs	20	80	100
BSZO 521	ZOOLOGY LAB V	6	3hrs	20	80	100
TOTAL				60	240	300

BSZO511 ANIMAL PHYSIOLOGY

Unit I: Digestion – Structure of alimentary canal – salivary glands, stomach, intestine. Enzymes secreted in alimentary canal. Digestion of Carbohydrate, Protein & Fat. ***Omega 3 fatty acids and its importance.***

Unit II: Respiration- Respiratory Organs, Respiratory Pigments, Mechanism of Breathing, Regulation of Breathing

Unit III: Blood- Composition and function of Blood, Blood Clotting, elementary idea about - Blood Pressure, Anemia and its types, Hemophilia. ***Causes of heart attack***

Unit IV: Excretion – Structure of Kidney, Mechanism of Urine Formation and Elimination- Ultrafiltration, Selective reabsorption and Tubular Secretion, Urea Cycle. ***Factors affecting stone formation (in kidney and gall bladder)***

Co-ordination – Nerve impulse and its transmission – on neuron and between neuron (synaptic transmission), reflex action, types of reflexes.

Unit V: Muscles – Types, Ultra structure, Muscle Proteins, Physiology of Muscle Contraction. Endocrine gland – location, structure and function of various endocrine glands- pituitary, thyroid, parathyroid, pancreas and adrenal - their hormones and diseases caused by deficiency

BSZO512 ECOLOGY

UNIT-I :Ecosystem and its components, Energy flow, Food chain and Food Web, Biotic Community, Ecological Succession.

UNIT-II : Terrestrial Ecosystem- Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem (Thar Desert), Aquatic Ecosystem - Fresh water ecosystem, Marine ecosystem.

UNIT-III : Laws of Limiting Factors, Physical Factors- Temperature, Light, Soil.

UNIT-IV : Biotic Factors- Competition, Predation, Parasitism, Commensalism, Mutualism, Population Ecology- Characteristics of population.

UNIT-V : Environmental Pollution-Causes, Effect and Control of- Soil Pollution, Air Pollution, Water Pollution, Noise Pollution, Radioactive Pollution.

ZOOLOGY LAB V
PRACTICALS BSZO521

1. Estimation of packed cell volume (P.C.V) with the help of centrifuge.
2. Preparation of haemin crystals.
3. Estimation of haemoglobin by photohaemoglobinometer.
4. Estimation of Water holding capacity of the given soil sample.
5. Estimation of soil moisture content of the given soil sample.
6. Osmotic effect on R.B.C.
7. Determination of blood sugar – fasting, pp, and random by glucometer.
8. Urine analysis for sugar, protein and pH.
9. Estimation of population density and frequency of animals in a community.
10. Demonstration of working of pH meter.
11. Analysis of pH of given water sample.
12. Demonstration of working of colorimeter.
13. Study of Pond ecosystem / Aquarium ecosystem.
14. Permanent preparation of different zooplanktons – *Daphnia, Cyclops, Cypris* .
15. Permanent preparation of different ectoparasites – Ticks, Mites, *Pediculus* .
16. Demonstration of working of sphygmomanometer (B.P. measurement) with the help of stethoscope.
17. Dissection of nervous system of grasshopper .

Distribution of Marks

Marks Allotted Time duration 3hrs

1. Dissection –	18
2. Microscopic Preparation –	12
3. Spots – (5spots x 4)	20
4. Experimental zoology	20
5. Year Work/ Practical Record – (CIA)	10
6. Practical Class Test - (2 x 5 Marks) (CIA)	10
7. Viva Voice -	10
Total	100

Suggested Readings

1. Principals of animal physiology by Christopher Moyes, Patricia Schulte
2. Introduction to Animal physiology by Ian Kay
3. Basic Physiology by Shree kumar
4. Essentials of Animal Physiology by S C Rastogi
5. Animal Physiology, Mechanism and Adaptation by Eckert R
6. Animal Physiology, Adaptation and Environment by Schiemdt Nielsen
7. Endocrine Physiology by C R Martin
8. Environmental Law for the Built Environment by Jack Rostron
9. A Forest History of India by Richard P.Tucker.
10. Fundamental of Ecology by Odum
11. Environment Protection and the Law by Dr. R K Khitoliya
12. Environmental Studies by Singh, Thakur & chauhan
13. Concepts of Ecology by Edward J. Kormondy
14. Ecology, Environment & Pollution by P K Gupta
15. Ecology and Environment by P D Sharma
16. Modern Concept of Ecology by H D Kumar
17. Biodiversity: Science and Development by Castri, F D & Younes