THIRD YEAR T. D.C.SCIENCE,
ZOOLOGY

The third year TDC examination shall consist of three theory papers, each of three hours duration and a practical examination of five hours duration.

	Marks
Paper-I: Animal Physiology, Biochemistry and Immunology	**50**
Paper-II : Ecology and Biostatistics	**50**
Paper-III : Ethology and Evolution	**50**
Practical :	**75**

Pattern of question paper in the annual examination and distribution of marks:

Each theory paper in the annual examination shall have three sections i.e. A,B, and C. In section A, total 10 questions will be set in the paper, selecting at least two from each unit. These questions to be answered in a word or so. All questions are compulsory. Each question carries 0.5 mark, total 05 marks.

In section B, there shall be total 10 questions, selecting two questions from each unit, five questions to be answered by the student selecting at least one from each unit. Answer should be given in approximately 250 words. Each question carries 05 marks, total 25 marks.

In section C, 04 descriptive type questions will be set in the examination paper from five units of the syllabus of the paper, selecting not more than one question from a unit. Each question may have two sub divisions. Students are required to answer any two questions approximately in 500 words. Each question is of 10 marks, total 20 marks.

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THIRD YEAR TDC SCIENCE
ZOOLOGY
PAPER-I
ANIMAL PHYSIOLOGY, BIOCHEMISTRY AND IMMUNOLOGY

Duration : 3 hours **M.M.: 50**

UNIT-I

1 Light microscopic structure and functions of the gastro-intestinal tract, liver, pancreas, lungs, kidney, testis and ovary.

2 Light microscopic structure, functions and disorders of endocrine glands – pituitary, pancreas, adrenal, thyroid and parathyroid.

3 Digestion and absorption of food in alimentary canal.

UNIT-II

4 Metabolism of carbohydrates: Glycolysis, decarboxylation of pyruvic acid, Krebs cycle, electron transport system and oxidative phosphorylation; glycogenesis and glycogenolysis.

5 Metabolosm of proteins: Essential and non-essential amino acids, metabolism of amino acids, biosynthesis of glutamic acid..

6 Metabolism of lipids : Biosynthesis of saturated fatty acids and B-oxidative pathways of fatty acid,; formatio9n of ketone bodies..

UNIT-III

7 Respiration: Mechanism of respiration, vital capacity of lungs, transport of gases, dissociation curve of oxyhaemoglobin and control of respiration, chloride shift.

8 Blood: structure and functions of blood cells, ABO blood troups and Rh factor, mechanism of blood clotting..

9 Ultrastructure of cardiac and skeletal muscles. Physiology of muscle contraction.

UNIT-IV

10 Excretion : Structure and function of nephron, control of renal function.

11 Nerve physiology: Ultrastructure of neuron, synapse, conduction of nerve impulse and neuromuscular junctions.

12 Reproductive physiology: Hormonal control of testicular and ovarian functions with reference to estrous and mentstrual cycles.

UNIT-V

13 Immunology: Definition, types of immunity: innate and acquired, humoral and cell-mediated.

14 Cell of immunity: macrophages, lympho9cytes (B and T types), T-helper cells, T-killer cells, plasma cells and memory cells.

15 Antibody : definition structure and functions of each class of immunoglobulins.

16 Antigen: antigenecity of molecules, haptens. Antigen – antibody reactions, precipitation reaction, agglutination reaction, neutralizing reaction, complementary and lytic reactions and phagocytosis.