

Cluster University Srinagar

ENTRANCE TEST SYLLABUS FOR ADMISSION TO 5-YEAR INTEGRATED, 3-YEAR HONOR'S & PROFESSIONAL PROGRAMMES SESSION 2019

SYLLABUS CLASS XI

SECTION B: (ZOOLOGY)

Marks: 35

Unit-III Diversity in Living world.

8 Marks

- i) Characteristic features of living organisms.
- ii) Salient features of animals (non chordates upto phylum level, chordates upto class level), Animal kingdom
- iii) Zoological parks, Natural museums (with special reference to local Zoos/National Parks (Manda, Mahamaya, Dachigam, Hemis)

Unit-IV Cell-Structure and Function

10 Marks

- i) **Cell-** Brief description of cell, Cell theory; Prokaryotic and eukaryotic cell, cell wall, cell membrane and cell organelles (Plastids, Mitochondria, Endoplasmic reticulum, Golgi bodies/dictyosomes, Ribosomes, Lysosomes, Nucleus, Vacuoles, Centrioles), Cilia and flagella, and nuclear organization.
- ii) **Cell Division:-** Cell cycle, Mitosis, Meiosis.
- iii) Basic chemical constituents of living bodies.
- iv) **Biomolecules:** Structure and functions of :- carbohydrates, proteins, lipids and nucleic acids, Metabolites (Primary and Secondary, Metabolism (elementary idea)
- v) **Enzymes:** Types, Properties and Functions.

Unit-III Histology and Morphology

7 marks

- i) **Animal tissues:-** Epithelial, Connective, Muscular & Nervous, Organ and Organ system
- ii) **Elementary Knowledge of :-** Morphology and Anatomy of Frog, Earthworm & Cockroach.

Unit IV Human Physiology

10 Marks

- i) Digestion and Absorption
- ii) Breathing and Respiration
- iii) Body fluids and circulation
- iv) Excretory products and elimination

Environmental Issues: Air and water pollution and their control, solid waste management, agrochemicals and their effects, Radioactive waste management, Green house effect and global warming, Ozone depletion in stratosphere, Deforestation, Any three case studies as success stories addressing environmental issues.

SECTION B (Zoology)

35 Marks

Unit-I : Reproduction

Marks 11

- i) **Asexual Reproduction:** Uniparental, modes: binary fission, sporulation, budding, gemmule, fragmentation, regeneration.
- ii) **Human Reproduction-** Male and female reproductive systems, Microscopic anatomy of testis & ovary; Gametogenesis (spermatogenesis & oogenesis. Menstrual cycle), Fertilization, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (elementary idea), Parturition (elementary idea) and Lactation (elementary idea).
- iii) **Reproductive Health:** Need for reproductive health & prevention of Sexually Transmitted Diseases (STD), Birth control- need & methods, Contraception and Medical Termination of Pregnancy (MTP), Amniocentesis, Infertility & assisted reproductive technologies: IVF, ZIFT, GIFT (Elementary idea for general awareness).

Unit-II: Genetics and Evolution

Marks 12

- Sex determination in humans, birds and honeybee.
- Inheritance pattern of Hemophilia and Color blindness in human beings.
- Mendelian Disorders in humans: Chromosomal disorders in humans, Down's syndrome, Turner's & Klinefelter's syndromes.
- Genome and Human Genome project.
- DNA fingerprinting.
- Origin of life: Theories & evidences with special reference to Darwin & Modern Synthetic theory of evolution, Hardy – Weinberg's principle. Adaptive radiation.
- Origin and evolution of Man.

Unit-III : Biology and Human Welfare

Marks 07

- **Health and Disease:** Basic concepts of immunology, vaccines; pathogens, parasites causing human diseases (Typhoid, Hepatitis, Malaria, Filariasis, Ascariasis, Common Cold, Amoebiasis, Ring Worm); Cancer, HIV and AIDS.
- **Insects & human welfare:** Silk, honey, lac.
- Adolescence, drug & alcohol abuse.
- Poultry, Dairy Farming

Unit IV: Biotechnology and its Application

Marks 05

- i) Genetic Engineering (Recombinant DNA technology), cloning
- ii) Applications in Health: Human insulin & vaccine production, gene therapy
- iii) Biosafety issues.