Section 1: Animal Diversity
Distribution, systematics and classification of animals, phylogenetic relationships (based on classical and molecular phylogenetic tools).

Section 2: Evolution
Origin and history of life on earth, theories of evolution, natural selection, adaptation, speciation.

Section 3: Genetics
Basic Principles of inheritance, molecular basis of heredity, sex determination and sex-linked characteristics, cytoplasmic inheritance, linkage, recombination and mapping of genes in eukaryotes, population genetics, genetic disorders, roles of model organisms in understanding genetic principles.

Section 4: Biochemistry and Molecular Biology
Nucleic acids, proteins, lipids and carbohydrates; replication, transcription and translation, Krebs cycle, glycolysis, enzyme catalysis, hormones and their actions, roles of vitamins and minerals.

Section 5: Cell Biology
Basic principles of cellular microscopy, structure of cell, cytoskeletal organization, cellular organelles and their structure and function, cell cycle, cell division, chromosomes and chromatin structure.

Section 6: Gene expression in Eukaryotes
Eukaryotic genome organization and regulation of gene expression, transposable elements.

Section 7: Animal Anatomy and Physiology
Comparative physiology, the respiratory system, Muscular system, circulatory system, digestive system, the nervous system, the excretory system, the endocrine system, the reproductive system, the skeletal system.

Section 8: Parasitology and Immunology
Nature of parasite, host-parasite relation, protozoan and helminthic parasites, the immune response, cellular and humoral immune response.

Section 9: Development Biology
Gametogenesis, Embryonic development, cellular differentiation, organogenesis, metamorphosis, Model organisms used in developmental biology, genetic and molecular basis of development, stem cells.

Section 10: Ecology
The ecosystem, Animal distribution, ecological niche and its contribution to ecological diversity, the food chain, population dynamics, species diversity, zoogeography, biogeochemical cycles, conservation biology, ecotoxicology.

Section 11: Animal Behaviour
Type of behaviours, courtship, mating and territoriality, instinct, learning and memory, social behaviour across the animal taxa, communication, pheromones, evolution of behavior in animals.