**The program of the final exam in the discipline  
«Plant and Animal Biodiversity»**

**Module 1. «Botany»**

**Section 1.** General characteristics of Algae. Division of green algae. *Charophyta*, etc.

To describe general characteristics of division, the structure of the cell green algae. Division of diatoms. Division of brown algae. The main features of the brown algae.

**Section 2.** The kingdom of Fungi. General characteristics of the kingdom of Fungi.

To study the features of the structure of mushroom. Mycelium. Reproduction. Symbiotic character of lichen. Morphological types. To explain the basic principles of the classification of lichen.

**Section 3.** General characteristics of the Mosses, Lycopodium, Horsetails.

Give the morphological and biological characteristics of the mosses, lycopodium, horsetails. Division of fern. The origin of the fern.

**Section 4.** Division of Gymnosperms. To research thegeneral characteristics of the Division of Gymnosperms and their origin. The main representatives of Gymnosperms, its characteristics and features. The main representatives of Gymnosperms, its characteristics and features.

**Section 5.** Class Dicotyledoneae. Order Nymphaeales Order Magnoliales*.* Order Ranunculales*.* Order Papaverales.

**Section 6**. Subclass Lamiidae. Order Lamiales. Subclass Asteridae. Order Campanulales and Order Asterales

**Section 7.** Class monocots. Subclass Liliidae. Order Liliales. Order Orchidales. Order Poales. Order Cyperales.

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**Module 2 «Zoology»**

**Section 8.** The primary and secondary structure of the roots. The transition zone from stem to the root. Differentiation of root cells. The primary structure of the root. The formation and functioning of secondary tissues. The secondary structure of the root. Features of the anatomical organization of air, storing roots.

**Section 1.** The formation of morphology as a science. The evolution of the body shape of plants, the general patterns of the morphological structure of vegetative organs. The subject, objectives, methods of plant morphology. The phased history of its formation: a descriptive period, a comparative morphological, ontogenetic, experimental ecological. The current state of morphology. The evolution of body shape to the emergence of plants on land: single-celled - non-cellular - colonial - multicellular, multi-layered organisms. The basic concepts of plant morphology: polarity, symmetry, reduction, abortion, atavism, metamorphosis, organs similar and homologous, convergence.

**Section 2.** The vegetative organs of higher plants. Root morphology. Determination of the root, its function, types of roots according to the nature of growth and origin. Types of root systems depending on habitat conditions. Mycorrhiza. Metamorphosis of the root.

**Section 3.** Vegetative organs of higher plants. The morphology of the shoot and the stem. The definition of shoot, the stem as an element of shoot. Buds, types of buds arrangement and leaf arrangement. Types of branching shoots, tillering of cereals. Metamorphosis of shoots and stems. Types of shoots.

**Section 4.** The vegetative organs of higher plants. Leaf morphology. Leaf - an element of shoot. Functions of leaf, origin. Growth and development of leaf. Three categories of leaves. Metamorphosis of leaves, leaves of insectivorous plants. Types of leaf position, the angle of divergence of leaves, the formula of the next leaf position.