**8D050 Biological and Related Sciences**

**Topics of questions for tickets**

***Questions about the second block –***

***50 - for SEP of the natural-technical direction***

###001 (question number)

Structure and chemical composition of bacterial cells and their types

###002 (question number)

Describe the mechanisms of nutrient supply to the bacterial cell

###003 (question number)

The reason why some phages are called "moderate" and how they are used in scientific research, biotechnology and medicine

###004 (question number)

General characteristics of the class Marchantiophyta

###005 (question number)

Modern classification and nomenclature of microorganisms

###006 (question number)

List the properties and characteristics that form the basis of the taxonomy of microorganisms

###007 (question number)

Features of the structure of the genetic apparatus of prokaryotes

###008 (question number)

Varieties of bacterial cell variability

###009 (question number)

Mechanisms of plasmid propagation, their general biological, biotechnological and medical significance

###010 (question number)

Characteristics of environmental factors that affect microorganisms. Give examples

###011 (question number)

Describe the conditions for the formation of conditioned reflexes. Mechanisms of formation of conditioned reflexes. Draw up a diagram of the reflex arc

###012 (question number)

Give the differences between conditional and unconditional reflexes

###013 (question number)

Factors influencing the emergence of instincts, and give examples of instincts

###014 (question number)

Types of external (unconditional) braking. Give examples of unconditional braking

###015 (question number)

Define and characterize the exteroceptive, interoceptive, and proprioceptive reflexes

###016 (question number)

Give a definition of the constant and fading inhibition of conditioned reflexes

###017 (question number)

Methods for determining the types of HNA of animals and humans

###018 (question number)

Give a definition of the imprinting process. Give an example of imprinting

###019 (question number)

Evolutionary pathways of body differentiation in lower plants

###020 (question number)

A turning point in the morphological evolution of the plant world

###021 (question number)

Differentiation of the plant body in connection with their access to land

###022 (question number)

The importance of plant tissue education

###023 (question number)

Histological elements that make up the phloem, and histological elements that are part of the xylem

###024 (question number)

The difference between bast fibers from wood fibers

###025 (question number)

Root system classification principles. Methods for studying root systems

###026 (question number)

Give the similarities and differences between leaf skins and root skins

###027 (question number)

General characteristics of reproductive organs and reproduction of higher plants

###028 (question number)

Draw a diagram of the alternation of generations in the forest fern – male fern

###029 (question number)

Principles of plotting diagrams and drawing up flower formulas

###030 (question number)

General characteristics of seed reproduction on the example of Scots pine and its biological significance

###031 (question number)

Classification of plant life forms

###032 (question number)

Describe the main methods of modern plant taxonomy and indicate their role in the development of this science

###033 (question number)

Structure and possible ways of evolution of the photosynthetic apparatus in algae cells

###034 (question number)

Division of the lycophytes (Lycopodiophyta). General characteristics and classification. The significance of modern lycophytes in nature.

###035 (question number)

Justification for the isolation of fungi from the plant kingdom

###036 (question number)

The role of lichens in soil formation and their practical significance

###037 (question number)

Mossy (Bryophyta). General characteristics and classification. The significance of modern mosses in nature.

###038 (question number)

The main differences between flowering plants and gymnosperms

###039 (question number)

The essence of double fertilization in angiosperms

###040 (question number)

Threats to the biodiversity of the plant world. Rational use and protection of useful plants of the natural flora of Kazakhstan

###041 (question number)

Biodiversity of the flora of Kazakhstan. The main plant raw materials

###042 (question number)

Methods of resource research and development of raw plants

###043 (question number)

Biodiversity of the animal world of Kazakhstan. Threats to the biodiversity of the animal world

###044 (question number)

International experience in the conservation of species biodiversity

###045 (question number)

Plant properties that ensure successful introduction

###046 (question number)

Introduction of woody and flowering plants and its significance for Kazakhstan

###047 (question number)

Modern ferns and their fossil ancestors. Division of Ferns (Polypodiophyta). General characteristics and classification.

###048 (question number)

Phylogeny of ferns. The importance of modern ferns in nature.

###049 (question number)

Division of Ferns (Polypodiophyta). The life cycle. The origin of the leaf.

###050 (question number)

The role of mosses in waterlogging and peat formation