

№	krok 2017
Topic	plant anatomy
Task	Within folded parenchyma of a fir needle there are cavernous structures filled with galipot and lined with live thin-walled secretory cells. Name these structures:
Correct answer	Resin ducts
B	Laticifers
C	Hydatodes
D	Glandules
E	Nectar glands
№	krok 2017
Topic	plant anatomy
Task	Stem thickening occurs due to functi-oning of the following structures:
Correct answer	Lateral meristem
B	Apical meristem
C	Wound meristem
D	Intercalary meristem
E	Endoderm
№	krok 2017
Topic	morphology pf plant cells
Task	During photosynthesis within plant cell chloroplasts there is short-term retai-ned starch being produced, which rapidly hydrolyzes into glucose. This starch is called:
Correct answer	Primary
B	Secondary
C	Transitory
D	Resistant
E	Reserve
№	krok 2017
Topic	seed plants
Task	Species character of <i>Thymus serpyllum</i> includes: apical inflorescences (flower heads), dark punctate glands on the inferior surface of a leaf, long hairs along the edge of leaf base, and:
Correct answer	Creeping stems

B	Thorns
C	Stems with prickles
D	Climbing stems
E	Short decumbent stems
№	krok 2017
Topic	plant morphology
Task	<i>Plantago major</i> inflorescence grows at the apex, its rachis is long, with sessile flowers. Name this type of inflorescence:
Correct answer	Spike
B	Panicle
C	Spadix
D	Capitulum
E	Thyrse
№	krok 2017
Topic	protein synthesis
Task	A number of hereditary diseases is caused by mutations in gene areas that determine beginning or end of an intron. What process results in removal of introns and joining of exons?
Correct answer	Splicing
B	Transcription
C	Recombination
D	Replication
E	Translation
№	krok 2017
Topic	seed plants
Task	What inflorescences are characteristic of <i>Cruciferae (Brassicaceae)</i> family?
Correct answer	Raceme or panicle
B	Capitulum or corymb
C	Capitulum or umbel
D	Corymb or spike
E	Spadix or panicle
№	krok 2017, 2016
Topic	seed plants

Task	You are studying a silvery downy plant of <i>Asteraceae</i> family, which is rich with essential oils and bitters. Harvested are apical sprouts with panicle of small round flower heads. This plant is:
Correct answer	<i>Artemisia absinthium</i>
B	<i>Arctium lappa</i>
C	<i>Bidens tripartita</i>
D	<i>Calendula officinalis</i>
E	<i>Chamomilla recutita</i>
№	krok 2017, 2016
Topic	plant morphology
Task	Colored or white component of double perianth, which consists of petals, is a:
Correct answer	Corolla
B	Flower cup
C	Androecium
D	Gynoecium
E	Perigonium
№	krok 2017
Topic	plant morphology
Task	Actinomorphic apopetalous corolla include:
Correct answer	Cruciform
B	Funnelform
C	Campanulate
D	Tubular
E	Ligulate
№	krok 2017, 2016
Topic	seed plants
Task	A plant producing essential oil has square stem, bilabiate corolla, coenobium fruit. These features are characteristic of:
Correct answer	<i>Lamiaceae</i>
B	<i>Papaveraceae</i>
C	<i>Polygonaceae</i>
D	<i>Solanaceae</i>
E	<i>Scrophulariaceae</i>

№	krok 2017
Topic	seed plants
Task	A plant under investigation has compound uniform monopodium inflorescence - compound umbel. What plant is it characteristic of?
Correct answer	<i>Anethum graveolens</i>
B	<i>Allium cepa</i>
C	<i>Sorbus aucuparia</i>
D	<i>Rosa canina</i>
E	<i>Centaurea cyanus</i>
№	krok 2017
Topic	plant morphology
Task	During field practice a student was tasked with making a morphological collection of coenocarpous fruits. What type of fruit belongs to this group?
Correct answer	Hesperidium
B	Aggregate-accessory fruit
C	Fragaria
D	Cynarodium
E	Drupe
№	krok 2017, 2016
Topic	plant morphology
Task	Both scientific and folk medicine uses medicinal plant <i>Glycyrrhiza glabra L.</i> What part of the plant is harvested?
Correct answer	Roots and rhizomes
B	Foliage
C	Inflorescence
D	Grass
E	Seeds
№	krok 2017, 2016
Topic	seed plants
Task	Rhizome of an <i>Asteraceae</i> family species is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characteristic of:
Correct answer	<i>Inula helenium</i>
B	<i>Hyoscyamus niger</i>

C	<i>Digitalis grandiflora</i>
D	<i>Sorbus aucuparia</i>
E	<i>Helianthus annuus</i>
№	krok 2017
Topic	seed plants
Task	Bark of a thornless xylophyte of the <i>Rhamnaceae</i> family has laxative effect. Name this plant:
Correct answer	<i>Frangula alnus</i>
B	<i>Aronia melanocarpa</i>
C	<i>Hippophaë rhamnoides</i>
D	<i>Rubus idaeus</i>
E	<i>Crataegus sanguinea</i>
№	krok 2017
Topic	seed plants
Task	A perennial plant has white flower heads grouped in compound corymbs and bipinnatisected or tripinnatisected leaves. Name this plant:
Correct answer	<i>Achillea millefolium</i>
B	<i>Melilotus officinalis</i>
C	<i>Potentilla erecta</i>
D	<i>Phaseolus vulgaris</i>
E	<i>Taraxacum officinale</i>
№	krok 2017
Topic	plant morphology
Task	During excursion into a conifer forest the students noticed that bilberry (<i>Vaccinium myrtillus</i>) stems are lignified only partially in their lower part, the upper part of the stem retains the form of caulis. Therefore, this plant can be classified as:
Correct answer	Suffrutex
B	Annual grass
C	Liana
D	Perennial grass
E	Tree
№	krok 2017
Topic	plant morphology

Task	Seeds of rye, corn, and other crops have small corymb-shaped cotyledon and accumulate nutrients in the:
Correct answer	Endosperm
B	Perisperm
C	Shell
D	Gemmule
E	Embryo root
№	krok 2017
Topic	seed plants
Task	The fruit is a thorned many-seeded capsule that opens into four flaps when ripe. It is characteristic of:
Correct answer	<i>Datura stramonium</i>
B	<i>Papaver somniferum</i>
C	<i>Hyoscyamus niger</i>
D	<i>Digitalis purpurea</i>
E	<i>Linum usitatissimum</i>
№	krok 2016
Topic	plant anatomy
Task	Microscopy of leaf epidermis of <i>Lamiaceae (Labiatae)</i> family plants revealed that both accessory cells are perpendicular to a stoma. Such stomata are called:
Correct answer	Diacytic
B	Paracytic
C	Anisocytic
D	Anomocytic
E	Tetracytic
№	krok 2016
Topic	plant morphology
Task	Stem thickening occurs due to functioning of the following structures:
Correct answer	Lateral meristem
B	Apical meristem
C	Wound meristem
D	Intercalary meristem
E	Endoderm

№	krok 2016
Topic	seed plants
Task	A species of <i>Ericaceae</i> family is characterized by the following type of leaves: alternate leaf arrangement, short footstalk, leathery, elliptic or obovate with retuse tip, downturned edges; upper surface is dark-green, lower surface is light-green with punctate glandules. Name this species:
Correct answer	<i>Vaccinium vitis-idaea</i>
B	<i>Arctostaphilos uva-ursi</i>
C	<i>Vaccinium oxycoccus</i>
D	<i>Vaccinium myrtillus</i>
E	<i>Ledum palustre</i>
№	krok 2016, 2015, 2013
Topic	plant anatomy
Task	A sample section of an axial body shows a complex consisting of phellogen and its derivatives - cork and phelloderm. This tissue is called:
Correct answer	Periderm
B	Colenchyma
C	Sclerenchyma
D	Epiblema
E	Epidermis
№	krok 2016, 2015
Topic	morphology pf plant cells
Task	Racemose clusters of calcium carbonate crystals are detected among the waste products of a protoplast. These crystals are:
Correct answer	Cystoliths
B	Isolated crystals
C	Raphides
D	Styloids
E	Druses
№	krok 2016
Topic	seed cells morphology
Task	Flax seeds are used in medicine as coating agents, due to the following ability of their secondary membranes:
Correct answer	Sliming

B	Suberization
C	Gummosis
D	Lignification
E	Mineralization
№	krok 2016, 2015
Topic	lycopodiophyta
Task	Spore and pollen analysis revealed tetrahedral spores with a semi-circular base and reticular surface in the pollen. It is the pollen of:
Correct answer	<i>Lycopodiophyta</i>
B	<i>Equisetiphyta</i>
C	<i>Bryophyta</i>
D	<i>Polypodiophyta</i>
E	<i>Pinophyta</i>
№	krok 2016, 2015
Topic	plant morphology
Task	<i>Quercus robur</i> leaves have the following type of lamina shape and division:
Correct answer	Pinnatilobate
B	Trilobate
C	Pinnatipartite
D	Palmatilobate
E	Palmatipartite
№	krok 2016, 2013, 2012
Topic	plant morphology
Task	Morphological analysis of poplar inflorescence shows that it is a simple monopodial inflorescence: main axis is drooping, the flowers are sessile, unisexual. Specify the type of inflorescence:
Correct answer	Catkin
B	Head
C	Capitulum
D	Cyme
E	Panicle
№	krok 2016
Topic	seed plants

Task	Weeds can be harmful for populace's wellbeing. Particularly, allergic reactions are often caused by the following plant in its period of blossoming:
Correct answer	<i>Ambrosia artemisiifolia</i>
B	<i>Equisetum arvense</i>
C	<i>Stellaria media</i>
D	<i>Erigeron canadensis</i>
E	<i>Taraxacum officinale</i>
№	krok 2016
Topic	plant morphology
Task	What forms from an ovule after fertilization of flowering plants?
Correct answer	Seed
B	Gametophyte
C	Sporophyte
D	Fruit
E	Endosperm
№	krok 2016
Topic	seed plants
Task	Corolla of a zygomorphic bisexual flower consists of 5 petals: the largest one is called banner, two lateral - wings, and two fused together - keel. This corolla is characteristic of <i>Fabacea</i> family and is called:
Correct answer	Papilionaceous
B	Lingulate
C	Rotate
D	Funnelform
E	Tubular
№	krok 2016, 2015
Topic	plant morphology
Task	Students should identify the following to determine the sex of a flower:
Correct answer	Stamens and pistils
B	Flower cup and corolla
C	Pedicle and receptacle
D	Symmetry

E	Color and type of indumentum
№	krok 2016
Topic	plant anatomy
Task	A substance performs mechanical function; its cells are covered with uniformly thick lignified membranes. This substance is:
Correct answer	Sclerenchyma
B	Collenchyme
C	Periderm
D	Cambium
E	Sieve tubes
№	krok 2015, 2014
Topic	plant anatomy
Task	When root was being studied under microscope, root hairs were detected, which are cell growths of:
Correct answer	Epiblema
B	Epidermis
C	Endoderm
D	Exoderm
E	Mesoderm
№	krok 2015
Topic	plant cells morphology
Task	After application of chlorine-zinc-iodine to the thick colourless cell membranes of collenchyme they became violet. That means the membranes are:
Correct answer	Cellulose
B	Lignificated
C	Cutinized
D	Mineralized
E	Suberinized
№	krok 2015, 2013
Topic	plant morphology
Task	A student analyzes an axial plant organ characterized by radial symmetry, unlimited growth, positive geotropism. It provides nutrition, vegetative propagation, anchorage of plant in the soil. This organ can be identified as:
Correct answer	Root

B	Stem
C	Leaf
D	Rhizome
E	Seed
№	krok 2015, 2012
Topic	seed plants
Task	In the practice of harvesting herbal raw material of <i>Asteraceae</i> family the term "flowers" means both individual flowers and inflorescences. However, the notion of "flowers" is botanically correct only for:
Correct answer	<i>Centaurea cyanus</i>
B	<i>Gnaphalium uliginosum</i>
C	<i>Arnica montana</i>
D	<i>Echinops ritro</i>
E	<i>Bidens tripartita</i>
№	krok 2015, 2013
Topic	seed cells morphology
Task	Microscopic study of soybean seeds stained with Sudan III revealed droplets of various sizes. They are:
Correct answer	Lipids
B	Proteins
C	Starch
D	Inulin
E	Glycogen
№	krok 2015
Topic	seed plants
Task	Corolla of a zygomorphic hermaphroditic flower consists of 5 petals: the largest one is called the banner, the two lateral petals are called the wings, and the two fused petals forming the keel. Such corolla is characteristic of medicinal plants of Leguminosae family. Name the type of corolla:
Correct answer	Papilionaceous
B	Labiata
C	Saucer-shaped
D	Funnelform
E	Tubular

№	krok 2015
Topic	seed plants
Task	You are studying the silvery downy plant of <i>Asteraceae</i> family, which is rich with essential oils and bitters. Harvested are apical sprouts with panicle of small round flower heads. This plant is:
Correct answer	<i>Artemisia absinthium</i>
B	<i>Arctium lappa</i>
C	<i>Bidens tripartita</i>
D	<i>Calendula officinalis</i>
E	<i>Chamomilla recutita</i>
№	krok 2015
Topic	seed plants
Task	A cultivated plant has green berrylike fruit and underground sprout modifications - tubers. The described plant is:
Correct answer	<i>Solanum tuberosum</i>
B	<i>Convalaria majalis</i>
C	<i>Polygonatum odoratum</i>
D	<i>Atropa belladonna</i>
E	<i>Solanum lycopersicum</i>
№	krok 2015
Topic	plant cells morphology
Task	Elongated narrow prismatic crystals with sharpened points were detected during microscopic investigation of <i>Convallaria majalis</i> mesophile. These crystals are:
Correct answer	Styloids
B	Druses
C	Crystalline sand
D	Cystoliths
E	Perigonium
№	krok 2015
Topic	seed plants
Task	A seed of a legume contains proteins and fatty oil. Name this legume:
Correct answer	<i>Glycine hispida</i>
B	<i>Vaccinium myrtillus</i>

C	Sinapis alba
D	Astragalus dasyanthus
E	Datura stramonium
№	krok 2015
Topic	seed plants
Task	Rhizome of a species belonging to the Asteraceae family is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characteristic of:
Correct answer	Inula helenium
B	Hyoscyamus niger
C	Digitalis grandiflora
D	Sorbus aucuparia
E	Helianthus annuus
№	krok 2015
Topic	plant morphology
Task	Dry many-seeded monocarp fruit opens along its ventral suture. It can be identified as:
Correct answer	Follicle
B	Legume
C	Nutlet
D	Drupe
E	Capsule
№	krok 2014
Topic	seed plants
Task	If aromatic secretory-downy plant has square in cross section stem, spike inflorescence made up from whorled dichasia, bilabiate corolla and its fruit consists of four nutlets, it probably belongs to the following family:
Correct answer	<i>Lamiaceae</i>
B	<i>Scrofulariaceae</i>
C	<i>Brassicaceae</i>
D	<i>Apiaceae</i>
E	<i>Solanaceae</i>
№	krok 2014
Topic	plant anatomy

Task	When root is studied under mi-croscope, one leading bundle is detected in its maturation zone, where xylem and phloem areas interchange radially. It can be concluded that this bundle type is:
Correct answer	Radial
B	Collateral
C	Bicollateral
D	Amphicribal
E	Amphivasal
№	krok 2014
Topic	plant anatomy
Task	Microscopy of monocotyledon leaf epidermis revealed that stomatal complex has four accessory cells. That means stomatal apparatus belongs to the following type:
Correct answer	Tetracytic
B	Diacytic
C	Anisocytic
D	Anomocytic
E	Paracytic
№	krok 2014
Topic	seed plants
Task	<i>Arctostaphylos uva ursi</i> , <i>Vaccini-um vitis idaeae</i> , <i>Vaccinium myrtillus</i> life forms can be defined as:
Correct answer	Small shrub (fruticulus)
B	Vine
C	Grass
D	Shrub (frutex)
E	Subshrub (suffrutex, semifrutex)
№	krok 2014
Topic	plant cells morphology
Task	In the course of plant cells treatment with phloroglucinol wi-th concentrated sulfuric acid their cell walls became crimson-red, which means:
Correct answer	Lignification
B	Suberization
C	Mucification

D	Cutinization
E	Mineralization
№	krok 2014
Topic	plant morphology
Task	A student analyses plant organ with radial symmetry, unlimited growth and positive geotropism, which provides nourishment, vegetative reproduction and plant fastening in soil. This organ is:
Correct answer	Root
B	Stem
C	Leaf
D	Rhizome
E	Seed
№	krok 2014
Topic	plant morphology
Task	In root transverse section layi-ng and formation from pericycle of the following organs can be seen in maturation zone:
Correct answer	Lateral roots
B	Trichome
C	Additional roots
D	Root hairs
E	Root cap
№	krok 2014
Topic	plant morphology
Task	In spring birch and poplar buds are gathered. They essentially are:
Correct answer	Embryonic shoots
B	Sporophyte embryos
C	Gametophyte embryos
D	Reduced sporophytes
E	Reduced gametophytes
№	krok 2014
Topic	plant morphology
Task	<i>Quercus robur</i> leaves have the following type of lamina shape and division:
Correct answer	Pinnatilobate

B	Trilobate
C	Pinnatipartite
D	Palmatilobate
E	Palmatipartite
№	krok 2014
Topic	plant morphology
Task	When studying <i>white mistletoe</i> , - perennial medicinal semiparasite plant, - it was revealed that its embryonic root buries into higher plant stem tissue and reaches vascular tissue system. This type of roots is called:
Correct answer	Haustrorial roots
B	Photosynthetic roots
C	Aerating roots
D	Contractile roots
E	Aerial roots
№	krok 2014
Topic	algae
Task	It is known that cells of <i>Chlorophyta</i> division representatives have chromatophores of various shapes. We can observe ribbon-like chromatophores in the species of the following genus:
Correct answer	<i>Spyrogyra</i>
B	<i>Volvox</i>
C	<i>Clorella</i>
D	<i>Chlamidomonas</i>
E	<i>Spirulina</i>
№	krok 2014
Topic	plant morphology
Task	During practical field session students have detected plant with diversity of leaves that differ by their placement on stem, parts development, size, shape, lamina division. This phenomenon is called:
Correct answer	Heterophylly
B	Phyllotaxy
C	Metamorphosis
D	Leaf mosaic
E	Venation

№	krok 2014
Topic	gymnospermae
Task	It is known that leaves of most gymnosperm species are represented by needles. Which one of the species listed below has macropodous leathery leaves with solid flabellate lamina, dichotomous venation and one or several notches along the upper margin?
Correct answer	<i>Ginkgo biloba</i>
B	<i>Cedrus libani</i>
C	<i>Juniperus communis</i>
D	<i>Picea abies</i>
E	<i>Abies sibirica</i>
№	krok 2014
Topic	plant morphology
Task	Leaves of <i>Aesculus hippocastanum</i> are composed of 5-7 assidenous folioles that are oblong-obovate shaped with dentate-serrated margin, are attached to petiole (leaf rachis), and therefore are:
Correct answer	Palmately compound
B	Pinnately compound
C	Pinnatisected
D	Palmatisected
E	Palmatilobed
№	krok 2014
Topic	plant morphology
Task	During morphological description of common periwinkle it was defined that it has shoot that trails on the ground and takes root. It allows to characterize such shoot as:
Correct answer	Creeping
B	Recumbent
C	Twining
D	Scandent
E	Tenent
№	krok 2014
Topic	plant morphology
Task	During morphological analysis of lily-of-the-valley (<i>Convallaria majalis</i>) leaf it was noted that lamina has wide elliptic shape and numerous veins are parallel to leaf margin and merge only at the leaf point. What is this venation type called?

Correct answer	Arcuate
B	Parallel
C	Palmate
D	Pinnate-reticulate
E	Dichotomous
№	krok 2014
Topic	plant morphology
Task	Androecium of <i>Brassica oleracea</i> flower has six stamens, with four stamens of inner circle longer than two stamens of outer circle. What is this type of androecium called?
Correct answer	Tetradynamous
B	Didynamous
C	Diadelphous
D	Monadelphous
E	Polydelphous
№	krok 2014
Topic	seed plants
Task	To make diaphoretic herbal tea the following inflorescences are used: 3-15 corymbose dichasia with light-yellow oblong wing-shaped membranous recaulescent squamella that fuses halfway with floral axis. Flowers are fragrant, yellowish. These inflorescences belong to:
Correct answer	<i>Tilia cordata</i>
B	<i>Viburnum opulus</i>
C	<i>Robinia pseudoacacia</i>
D	<i>Mentha piperita</i>
E	<i>Padus avium</i>
№	krok 2014
Topic	plant morphology
Task	S.H.Navashyn, Ukrainian scientist, was the first one, who described double fertilization. In the process of fertilization first spermium conjugates with central nucleus of embryo sac and second spermium with:
Correct answer	Ovicell
B	Synergides
C	Antipodes
D	Nucellus

E	Chalaza
№	krok 2014
Topic	plant morphology
Task	Cherry (<i>Prunus cerasus</i>) inflorescence has short floral axis and approximately same length pedicles emerging from one point. It is characteristic of the following inflorescence organisation:
Correct answer	Umbel
B	Corymb
C	Raceme
D	Spike
E	Head
№	krok 2014
Topic	lichens
Task	Representatives of this division propagate vegetatively by special formations: isidia, soredia, lobules. Name this division.
Correct answer	<i>Lichenes</i>
B	<i>Basidiomycota</i>
C	<i>Equisetophyta</i>
D	<i>Lycopodiophyta</i>
E	<i>Polypodiophyta</i>
№	krok 2014
Topic	plant anatomy
Task	Having been studied, conifer wood is determined to be composed of cells with pointed ends and lignified ring-porous cell wall. Therefore, this tissue of conifers is represented only by:
Correct answer	Tracheids
B	Vessels
C	Sieve tubes
D	Companion cells
E	Bast fibers
№	krok 2014
Topic	seed plants
Task	When studying five herbarium specimen of medicinal plants, it was determined that one of them belongs to <i>Fabaceae</i> family. Which one is it?

Correct answer	<i>Ononis arvensis</i>
B	<i>Atropa belladonna</i>
C	<i>Hyoscyamus niger</i>
D	<i>Datura stramonium</i>
E	<i>Solanum dulcamara</i>
№	krok 2014
Topic	seed plants
Task	You are studying the silvery downy plant of <i>Asteraceae</i> family, which is rich with essential oils and bitters. Harvested are apical sprouts with panicle of small round flower heads. This plant is:
Correct answer	<i>Artemisia absinthium</i>
B	<i>Arctium lappa</i>
C	<i>Bidens tripartita</i>
D	<i>Calendula officinalis</i>
E	<i>Chamomilla recutita</i>
№	krok 2014
Topic	seed plants
Task	Stinging nettle (<i>Urtica dioica</i>), hop (<i>Humulus lupulus</i>) and common elder (<i>Sambucus nigra</i>) are plants that require high nitrogen content in soil, which means that they are:
Correct answer	Nitrophilous
B	Nitrophobous
C	Calciphilous
D	Calciphobous
E	Halophytic
№	krok 2013
Topic	seed plants
Task	A plant under examination has papilionaceous flowers. This plant belongs to the following family:
Correct answer	<i>Fabaceae</i>
B	<i>Scrofulariaceae</i>
C	<i>Ranunculaceae</i>
D	<i>Lamiaceae</i>
E	<i>Asteraceae</i>

№	krok 2013
Topic	plant anatomy
Task	Microscopic analysis of a root revealed the following features: primary structure, endodermal cells with horseshoe-shaped areas, radial fascicle of the central cylinder, more than six xylem rays. Such root structure is typical for the following plants:
Correct answer	Angiosperms, monocotyledons
B	Angiosperms, dicotyledons
C	Gymnosperms, conifers
D	Gymnosperms, gnetalians
E	Pteridosperms
№	krok 2013
Topic	seed plants
Task	Analysis of a plant revealed essential-oil glands with several layers of cells arranged in pairs. This allows for the possibility that the plant relates to the family:
Correct answer	<i>Asteraceae</i>
B	<i>Scrofulariaceae</i>
C	<i>Solanaceae</i>
D	<i>Apiaceae</i>
E	<i>Lamiaceae</i>
№	krok 2013
Topic	plant anatomy
Task	Microscopic examination of a perennial stem revealed the secondary integumentary tissue that was formed as a result of cell division of:
Correct answer	Phellogen
B	Procambium
C	Cambium
D	Pericycle
E	Protoderma
№	krok 2013
Topic	seed plants
Task	A plant under study has stipules fused together and thus forming a tight tube - ochrea, that is a diagnostic feature of the following family:
Correct answer	<i>Polygonaceae</i>
B	<i>Gramineae</i>

C	<i>Rosaceae</i>
D	<i>Papaveraceae</i>
E	<i>Clusiaceae</i>
№	krok 2013
Topic	seed plants
Task	Which representative of the <i>Rosaceae</i> family has spring bloom in form of white, fragrant flowers gathered in pendulous racemes at the ends of short shoots?
Correct answer	<i>Padus racemosa (P. avia)</i>
B	<i>Potentilla erecta</i>
C	<i>Sorbus aucuparia</i>
D	<i>Cerasus vulgaris</i>
E	<i>Crataegus sanguinea</i>
№	krok 2013
Topic	plant anatomy
Task	Cross section of a root conducting zone shows pericycle that gives rise to:
Correct answer	Lateral roots
B	Trichomes
C	Adventitious roots
D	Root fibrilla
E	Root cap
№	krok 2013, 2012
Topic	seed plants
Task	Which medicinal plant of the <i>Asteraceae</i> family has only disk flowers in the flowerhead?
Correct answer	Three-part beggarticks (<i>Bidens tripartita</i>)
B	Dandelion (<i>Taraxacum officinale</i>)
C	<i>Echinacea purpurea</i>
D	Cornflower (<i>Centaurea cyanus</i>)
E	Common yarrow (<i>Achillea millefolium</i>)
№	krok 2013, 2012
Topic	lycopodiophyta

Task	Spore and pollen analysis revealed in the pollen some tetrahedral spores with a semi-circular base and a reticular surface, which may belong to:
Correct answer	<i>Lycopodiophyta</i>
B	<i>Equisetiphyta</i>
C	<i>Bryophyta</i>
D	<i>Polypodiophyta</i>
E	<i>Pinophyta</i>
№	krok 2013
Topic	plant morphology
Task	Many species of wild rose are a source of vitamins, fatty oils and herbal materi-al. Specify the juicy pseudocarps that are procured as herbal raw material:
Correct answer	Rose hips
B	Coenobia
C	Hesperides
D	Aggregate-accessory fruits
E	Cenocarp stone-fruits
№	krok 2013
Topic	plant morphology
Task	Comparison of the underground organs of herbaceous plants revealed that in the bipartite annuals the following organ prevails:
Correct answer	Main root system
B	Adventitious root system
C	Rhizome
D	Bulb
E	Corm
№	krok 2013
Topic	plant morphology
Task	<i>Datura stramonium</i> has dry many-seeded fruits formed by syncarpous gynoecium that dehisce when the valves are broken off. Specify the fruit type:
Correct answer	Capsule
B	Follicle
C	Silique

D	Coenobium
E	Hesperidium
№	krok 2013
Topic	plant morphology
Task	During the morphologic analysis of various plant leaves the students found the leaves, whose length of the leaf blade is 5 times more than its width. Specify the shape of the leaf blade:
Correct answer	Linear
B	Elliptical
C	Lanceolate
D	Ovoid
E	Reniform
№	krok 2013
Topic	plant morphology
Task	The fruit of black locust is dry, formed of a single carpel, dehisces by the ventral and dorsal sutures on two sides, the seeds are attached along the ventral suture. Such fruit is called:
Correct answer	Legume
B	Siliqua
C	Follicle
D	Capsule
E	Silicula
№	krok 2013
Topic	plant morphology
Task	When studying the diagnostic features of <i>Origanum vulgare</i> , the students noticed that the plant had a compound monopodial inflorescence. It is called:
Correct answer	Corymbose panicle
B	Cluster of heads
C	Cincinnus
D	Bostyx
E	Head
№	krok 2013
Topic	plant anatomy

Task	On the photomicrograph of a herbaceous plant stem the bicollateral vascular bundles are clearly visible. The microspecimen represents the stem of the following plant:
Correct answer	Pumpkin
B	Rye
C	Flax
D	Corn
E	Solomon's seal
№	krok 2013
Topic	plant anatomy
Task	What type of conducting bundles is typical for all root zones of one-seeded plants?
Correct answer	Radical
B	Central phloem
C	Central xylem
D	Bilateral
E	Collateral
№	krok 2013
Topic	seed plants
Task	The figwort family <i>Scrophulariaceae</i> includes a biennial plant up to 1,5 m hi-gh, with golden-yellow flowers gathered in spiked inflorescences. The flowers have five stamens. Specify this plant:
Correct answer	<i>Verbascum flomoides</i>
B	<i>Digitalis purpurea</i>
C	<i>Digitalis grandiflora</i>
D	<i>Digitalis lanata</i>
E	<i>Digitalis Ferruginea</i>
№	krok 2013, 2012
Topic	plant morphology
Task	<i>Astragalus dasyanthus</i> has sessile flowers gathered into inflorescences with a short thick axis. This kind of inflorescence is called:
Correct answer	Capitulum
B	Cyme
C	Raceme
D	Head

E	Calathidium
№	krok 2013
Topic	plant anatomy
Task	In a sample studied under a microscope the multilayer palisade (columnar) parenchyma can be clearly seen. Such structure is typical for:
Correct answer	Leaf
B	Root
C	Dicotyledon stem
D	Rhizomes of ferns
E	Adventitious roots
№	krok 2012
Topic	plant anathomy
Task	Microscopic examination of absorption zone of primary root cortex revealed that it consisted mainly of loose multilayer living parenchyma with amyloid granules. It is called:
Correct answer	Mesoderm
B	Endoderm
C	Exoderm
D	Collenchyme
E	Phellogene
№	krok 2012
Topic	seed plants
Task	A plant under examination has papilionaceous flower. This plant belongs in the family:
Correct answer	<i>Fabaceae</i>
B	<i>Scrofulariaceae</i>
C	<i>Ranunculaceae</i>
D	<i>Lamiaceae</i>
E	<i>Asteraceae</i>
№	krok 2012
Topic	plant anathomy
Task	Microscopic examination of a perennial stem revealed integumentary tissue of secondary origin that was formed as a result of cell division of:

Correct answer	Phellogen
B	Procambium
C	Cambium
D	Pericycle
E	Protoderma
№	krok 2012
Topic	plant anathomy
Task	While studying a stem covered with periderm, the researcher realized that gas exchange takes place through . . .
Correct answer	Lenticels
B	Stomata
C	Pores
D	Non-suberized (conducting) cells
E	Hydatodes
№	krok 2012
Topic	seed plants
Task	The analyzed plant has hollow ribbed stems, compound umbel inflorescence, schizocarpic fruit (cremocarp) and is rich in essential oils, which is a characteristic of:
Correct answer	<i>Apiaceae</i>
B	<i>Fabaceae</i>
C	<i>Ericaceae</i>
D	<i>Brassisaceae</i>
E	<i>Asteraceae</i>
№	krok 2012
Topic	plant morphology
Task	A student had to analyze an axial plant organ characterized by radial symmetry, unlimited growth, positive geotropism. It provided nutrition, vegetative propagation, anchorage of plant in the soil. This organ was identified as . . .
Correct answer	Root
B	Stem
C	Leaf
D	Rhizome
E	Seed

№	krok 2012
Topic	plant morphology
Task	<i>Calendula officinalis</i> which a representative of the aster family is characterized by the following inflorescence type:
Correct answer	Flowerhead
B	Umbel
C	Catkin
D	Glome
E	Cyme
№	krok 2012
Topic	seed plants
Task	A perennial herbaceous plant has ascending quadrangular stem and oppositely arranged leaves. The flowers with bilabiate corolla are zygomorphic, bisexual, arranged in whorls in the leaf axils. The fruit type is coenobium. The described medicinal plant relates to the following botanic family:
Correct answer	<i>Lamiaceae</i>
B	<i>Asteraceae</i>
C	<i>Poaceae</i>
D	<i>Brassicaceae</i>
E	<i>Rosaceae</i>
№	krok 2012
Topic	plant anathomy
Task	While determining the type and characteristics of conducting bundles of axial organs one should take into account the positional relation between phloem and xylem and . . .
Correct answer	Cambium
B	Procambium
C	Collenchyme
D	Pericycle
E	Phellogen
№	krok 2012
Topic	fungi
Task	Mycothallus of the fungus under study consists of a stipe, pileus, lamellar hymenophore. This fungus belongs in the class:
Correct answer	Basidiomycetes

B	Ascomycetes
C	Zygomycetes
D	Deuteromycetes
E	Oomycetes
№	krok 2012
Topic	plant morphology
Task	Inflorescence of greater plantain grows out at apex, the main axis is long, and flowers are sessile. This type of inflorescence is called:
Correct answer	Spike
B	Panicle
C	Spadix
D	Capitulum
E	Thyrus
№	krok 2012
Topic	seed plants
Task	Diaphoretic herbal tea includes dichasial cymes with light-yellow, oblong, wing-like, squamelliferous perianth. The flowers are fragrant, yellowish. These inflorescences belong to:
Correct answer	<i>Tilia cordata</i>
B	<i>Viburnum opulus</i>
C	<i>Robinia pseudoacacia</i>
D	<i>Mentha piperita</i>
E	<i>Padus avium</i>
№	krok 2012
Topic	pinaceae plant family
Task	A common species of the <i>Pinaceae</i> family is a tall, evergreen, shadeenduring tree. The needles are solid, prickly, quadrangular in crosssection, spirally arranged. This tree is:
Correct answer	<i>Picea abies</i>
B	<i>Larix sibirica</i>
C	<i>Pinus sylvestris</i>
D	<i>Juniperus communis</i>
E	<i>Ephedra equisetina</i>
№	krok 2012

Topic	seed plants
Task	Examination of the leaf epidermis revealed cells containing cystoliths. Presence of cystoliths is typical for plants of the following family:
Correct answer	<i>Urticaceae</i>
B	<i>Brassicaceae</i>
C	<i>Fabaceae</i>
D	<i>Solanaceae</i>
E	<i>Papaveraceae</i>
№	krok 2011, 2010
Topic	plant anatomy
Task	Microscopic examination of primary cortex of a root in its absorption zone revealed that it consisted mainly of multilayer loose living parenchyma with amyloid granules. It is called:
Correct answer	Mesoderm
B	Endoderm
C	Exoderm
D	Collenchyme
E	Phellogene
№	krok 2011, 2010
Topic	plant morphology
Task	Corolla of the origanum flower is zygomorphic, sympetalous and consists of a tube and two limbs. The upper limb is bilobate and the lower is trilobate. Such corolla is called:
Correct answer	Bilabiate
B	Unilabiate
C	Lingulate
D	Thimble-like
E	-
№	krok 2011
Topic	seed plants
Task	A plant has ribbed and hollow stems, sheathing pinnatisected leaves; compound umbel inflorescence; fruit with essential oil tubules. These features are typical for the representatives of the following family:
Correct answer	<i>Apiaceae</i>
B	<i>Solanaceae</i>

C	<i>Fabaceae</i>
D	<i>Brassicaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2011, 2009, 2008
Topic	plant morphology
Task	One of the examined soft fruits is characterized by essential oil exocarp, spongioid mesocarp and overgrown endocarp that consists of juice saccules. What fruit was under examination?
Correct answer	Hesperidium
B	Pepo
C	Multicoccus
D	Drupe
E	Bacca
№	krok 2011, 2010
Topic	seed plants
Task	During identification of a perennial herb of <i>Ranunculaceae</i> family it was found to have: apical flowers of regular form up to 6 cm in diameter; 5 downy violet-and-green calyx lobes of irregular serrate form; up to 20 bright yellow glossy petals without nectarostigma. What plant is it?
Correct answer	<i>Adonis vernalis</i>
B	<i>Helleborus purpurascens</i>
C	<i>Ranunculus acris</i>
D	<i>Delphinium elatum</i>
E	<i>Aconitum napellus</i>
№	krok 2011
Topic	seed plants
Task	A herb under analysis relates to the Malvaceae family and is used as an expectorant and coating agent. The stem is erect, with simple palmate three to five lobed leaves, large pink flowers growing in short panicles. The herb has schizocarpic fruit - a capsule. Identify the plant:
Correct answer	<i>Althaea officinalis</i>
B	<i>Fragaria vesca</i>
C	<i>Potentilla erecta</i>
D	<i>Tussilago farfara</i>

E	<i>Thymus serpyllum</i>
№	krok 2011
Topic	bryophyta
Task	A higher avascular plant shows clear alternation of generations with the dominant sexual (gametophyte) and reduced a sexual (sporophyte) generation. This indicates that the plant relates to the:
Correct answer	<i>Bryophyta</i>
B	<i>Lycopodiophyta</i>
C	<i>Equisetophyta</i>
D	<i>Pteroid</i>
E	<i>Gymnosperms</i>
№	krok 2011, 2010
Topic	plant cells morphology
Task	During examination of a plant cell under the electron microscope some structures in form of a stack of flattened membrane cisterns and vesicles were found. What organelles are these?
Correct answer	Golgi apparatus
B	Endoplasmic reticulum
C	Plastids
D	Mitochondrions
E	Microbodies
№	krok 2011, 2010
Topic	plant morphology
Task	A flower has the androecium consisting of two long and two short stamens. Therefore the flower's androecium is:
Correct answer	Didynamous
B	Tetradynamous
C	Diadelphous
D	Tetradelphous
E	Polyadelphous
№	krok 2011, 2010
Topic	plant anathomy
Task	Microscopic examination of ground tissue of a small branch revealed cork and felloderm. These are the derivates of:
Correct answer	Phellogen

B	Cambium
C	Procambium
D	Protoderm
E	Pericycle
№	krok 2011
Topic	plant cells morphology
Task	As a result of staining of a plant microslide with <i>Sudan III</i> solution the cell membranes turned pink. This indicates the presence of:
Correct answer	Suberin
B	Cellulose
C	Lignin
D	Pectin
E	Hemicellulose
№	krok 2011, 2009
Topic	seed plants
Task	Examination of five herbarium specimens of medicinal plants showed that one of them belonged to the <i>legume</i> family, namely:
Correct answer	<i>Glycyrhiza glabra</i>
B	<i>Atropa belladonna</i>
C	<i>Hyoscyamus niger</i>
D	<i>Datura stramonium</i>
E	<i>Solanum dulcamara</i>
№	krok 2011, 2010
Topic	plant morphology
Task	A citrus fruit is characterized by the glandular exocarp, spongiöse mesocarp and overgrown endocarp consisting of juice sacs. Such fruit is called:
Correct answer	Hesperidium
B	Legume
C	Pod
D	Drupe
E	Bacca
№	krok 2011
Topic	seed plants

Task	A leaf of a plant under examination has a membranous ochrea wrapped around the internode base. Presence of such modified stipules is the diagnostic feature of the following family:
Correct answer	<i>Polygonaceae</i>
B	<i>Gramineae</i>
C	<i>Rosaceae</i>
D	<i>Legumes</i>
E	<i>Solanaceae</i>
№	krok 2011, 2010
Topic	seed plants
Task	Choose a plant whose apical sprouts are used in medical practice for sedative drug production:
Correct answer	<i>Leonurus cardiaca</i>
B	<i>Glycyrrhiza glabra</i>
C	<i>Digitalis purpurea</i>
D	<i>Ledum palustre</i>
E	<i>Fagopyrum sagittatum</i>
№	krok 2011
Topic	plant morphology
Task	Morphological analysis of leaves revealed that each vein runs along the lamina separately and the veins join together only at the top of the lamina. This kind of venation is called:
Correct answer	Arcuate
B	Pinnate
C	Dichotomous
D	Palmate
E	-
№	krok 2011
Topic	plant morphology
Task	A student had analyzed an inflorescence and found out that the flowers on the developed main axis were set one by one, and due to the various length of pedicels they were located almost in the same plane, so they formed:
Correct answer	Corymb
B	Glomus
C	Anthodium

D	Volute
E	Umbel
№	krok 2011
Topic	plant morphology
Task	Saffron propagates vegetatively - via corms which are a modification of . . .
Correct answer	Underground shoot
B	Main root
C	Above-ground shoot
D	Lateral roots
E	Additional roots
№	krok 2011
Topic	plant morphology
Task	Select the fruit that meets the description: monocarpic, dry, polyspermous, can be split apart only in the ventral suture. The seeds are located along the ventral suture:
Correct answer	Follicle
B	Coccus
C	Fleshy stone fruit
D	Dry stone fruit
E	Follicetum
№	krok 2011
Topic	plant anathomy
Task	It is known that the leaves of <i>Eucalyptus globulus</i> have cavities with well-defined internal boundaries and filled with essential oils. They are called:
Correct answer	Schizogenous cavities
B	Non-articulated laticifers
C	Schizolysigenous cavities
D	Articulated laticifers
E	Lysigenous cavities
№	krok 2010
Topic	plant morphology

Task	Morphological analysis of an inflorescence revealed that its flowers were attached to the same axis at different levels but due to the various length of peduncle they grew in the same plane. Such inflorescence is called:
Correct answer	<i>Corymb</i>
B	<i>Anthodium</i>
C	<i>Glomus</i>
D	<i>Umbel</i>
E	<i>Spike</i>
№	krok 2010
Topic	plant cells morphology
Task	Passive and active transport of substances is realized through the cell membrane. Name the type of active transport by which the membrane changes its structure:
Correct answer	Endocytosis
B	Osmosis
C	Filtration
D	Diffusion
E	Facilitated diffusion
№	krok 2010
Topic	plant anathomy
Task	Examination of a root revealed a tissue that has root fibrils and doesn't have stomata and cuticle. What tissue is it?
Correct answer	Epiblema
B	Epiderm
C	Periderm
D	Endoderm
E	Exoderm
№	krok 2010
Topic	plant anathomy
Task	A section of beet root has several layers of cambium that form additional conducting bundles. What is the structure of the given root?
Correct answer	Secondary, polycambial
B	Secondary monocambial
C	Primary, polycambial
D	Primary, monocambial

E	Transitional, monocambial
№	krok 2010, 2009
Topic	bryophyta
Task	A higher nonvascular plant has distinct alternation of dominant sexual (gametophyte) and reduced asexual (sporophyte) generations. This indicates that the plant belongs to the following division:
Correct answer	Bryophyta
B	Lycopsida
C	Equisetophyta
D	Pteridophyta
E	Gymnospermae
№	krok 2010
Topic	plant morphology
Task	It is known that a seed without endosperm and perisperm has its nutrients accumulated in:
Correct answer	Embryo cotyledons
B	Embryo root
C	Embryo stalk
D	Gemma
E	Seed coat
№	krok 2010, 2009
Topic	plant cells morphology
Task	Microscopic examination of a ficus leaf revealed in some cells of its epidermis a protrusion of the cell membrane with an accumulation of crystals that dissolve in the hydrochloric acid and release carbonic acid gas. This structure is called:
Correct answer	Cystolith
B	Raphide
C	Druse
D	Single crystal
E	Styloid
№	krok 2010
Topic	plant morphology
Task	While examining structure of a root the students payed attention to an area where the superficial cells formed root fibrils. What root zone is it?

Correct answer	Suction
B	Cell division
C	Extension
D	Conduction
E	Pileorhiza
№	krok 2010
Topic	seed plants
Task	One of the plants under examination has a zygomorphic flower and papilionaceous corolla. This plant is called:
Correct answer	<i>Melilotus officinalis</i>
B	<i>Mentha piperita</i>
C	<i>Valeriana officinalis</i>
D	<i>Urtica dioica</i>
E	<i>Rosa canina</i>
№	krok 2010
Topic	seed plants
Task	A medicinal herb under examination has the capsule fruit with laticifers and small openings. This herb is called:
Correct answer	<i>Papaver somniferum</i>
B	<i>Chelidonium majus</i>
C	<i>Zea mays</i>
D	<i>Mentha piperita</i>
E	<i>Sanquisorba officinalis</i>
№	krok 2010, 2008
Topic	plant morphology
Task	You need to specify a monocarpous one-seeded fruit with hard scleroid endocarp and soft mesocarp. This fruit is:
Correct answer	<i>Drupe</i>
B	<i>Legume</i>
C	<i>Silique</i>
D	<i>Capsule</i>
E	<i>Bacca</i>
№	krok 2010, 2009, 2008
Topic	seed plants

Task	One of the herbarium specimens of medicinal plants relates to the <i>Asteraceae</i> family. This plant is:
Correct answer	<i>Arctica lappa</i>
B	<i>Atropa belladonna</i>
C	<i>Cassia acutifolia</i>
D	<i>Urtica dioica</i>
E	<i>Rubus idaeus</i>
№	krok 2010
Topic	plant cells morphology
Task	The section of a sunflower seed has been treated with <i>Sudan III</i> solution that caused pink-and-orange staining. This is the evidence of presence of:
Correct answer	Fatty oil
B	Protein
C	Starch
D	Inulin
E	Cellulose
№	krok 2010
Topic	plant anathomy
Task	Characteristic peculiarity of mechanic plant tissues is that they consist mainly of dead cells, but there is one type of mechanic tissues consisting of living cells. Which of the listed mechanic tissues contains the living protoplast?
Correct answer	Collenchyme
B	Scleroids
C	Libriiform
D	Perivascular fibers
E	Phloem fibers
№	krok 2009, 2008
Topic	plant anathomy
Task	Microscopical examination of primary cortex of a root in its absorption zone revealed that it consisted mainly of multilayer living loose parenchyma with amyloid granules. It is called:
Correct answer	Mesoderm
B	Endoderm
C	Exoderm

D	Collenchyme
E	Phellogene
№	krok 2009
Topic	plant cells morphology
Task	A drug which inhibits ATP synthesis in a cell has been used during an experiment. What type of transmembrane transport will be disturbed?
Correct answer	Active
B	Diffusion
C	Osmosis
D	Filtration
E	Facilitated diffusion
№	krok 2009
Topic	plant anathomy
Task	Underneath the stem epidermis some layers of living perenchymal cells were found. The cells contained chloroplasts and had cellulose membranes with thickened angles. This tissue is called:
Correct answer	Angular collenchyme
B	Lacunar collenchyme
C	Lamellar collenchyme
D	Storage parenchyme
E	Chlorophyll-containing parenchyme
№	krok 2009
Topic	plant morphology
Task	Examination of a medicinal plant revealed that its underground organ had nodes, internodes, cataphylls, gemmae and secondary roots. Therefore, this underground organ is:
Correct answer	Rhizome
B	Storage root
C	Root bulb
D	Stolon
E	Tuber
№	krok 2009
Topic	plant morphology

Task	A fruit under examination is pseudomonocarpic, with woody pericarp and one seed. The seed cuticle remains unfused with the pericarp. Such fruit is called:
Correct answer	Nut
B	Cremocarp
C	Achenocarp
D	Caryopsis
E	Pseudomonocarpic drupe
№	krok 2009
Topic	plant morphology
Task	The birch has compound inflorescences with drooping main axis bearing dichasia composed of unisexual cells. Therefore, this inflorescence is called:
Correct answer	Ament
B	Raceme
C	Spadix
D	Spike
E	Glomus
№	krok 2009
Topic	seed plants
Task	Prevailing plants of a foliage forest are monoecious high trees coated with thick dark-grey rind with deep cracks. Their leaves are short-petiolar, pinnatilobate. Their fruit is acorn. Therefore, the dominating species is:
Correct answer	<i>Quercus robur</i>
B	<i>Robinia pseudoacacia</i>
C	<i>Aesculus hippocastanum</i>
D	<i>Tilia cordata</i>
E	<i>Betula verrucosa</i>
№	krok 2009
Topic	algae
Task	A big brown alga has a stipe, rhizoids and laminae rich in alginates and iodine. It belongs to the following genus:
Correct answer	<i>Laminaria</i>
B	<i>Chlorella</i>
C	<i>Chlamydomonas</i>

D	<i>Spirogira</i>
E	<i>Ulothrix</i>
№	krok 2009
Topic	seed plants
Task	An essential oil plant under examination has a square stem, flowers with bilabiate corolla, coenobium fruit. These characteristics are typical for the following family:
Correct answer	<i>Lamiaceae</i>
B	<i>Papaveraceae</i>
C	<i>Polygonaceae</i>
D	<i>Solanaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2009
Topic	plant morphology
Task	During the field practice a student found a plant with disk-shaped structure of its rachis, sessile flowers and husk. This inflorescence is called:
Correct answer	Anthodium
B	Spike
C	Spadix
D	Glomus
E	Raceme
№	krok 2009
Topic	plant cells morphology
Task	As a result of staining of a plant microslide with <i>Sudan</i> III solution the cell membranes turned pink. This indicates the presence of:
Correct answer	Suberin
B	Cellulose
C	Lignin
D	Pectin
E	Hemicellulose
№	krok 2009
Topic	plant cells morphology

Task	After a plant microslide had been processed with phloroglucinol together with concentrated hydrochloric acid, the cell membranes turned crimson red. This indicates presence of:
Correct answer	Lignin
B	Pectin
C	Cellulose
D	Hemicellulose
E	Suberin
№	krok 2009
Topic	seed plants
Task	Essential oil glandules consisting of ecretory cells arranged in two rows and four tiers can be be found in most plants of the following family:
Correct answer	<i>Asteraceae</i>
B	<i>Apiaceae</i>
C	<i>Lamiaceae</i>
D	<i>Rosaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2009, 2008
Topic	seed plants
Task	Bacca fruit is typical for the following representative of <i>Solanaceae</i> family:
Correct answer	<i>Atropa belladonna</i>
B	<i>Hyoscyamus niger</i>
C	<i>Datura stramonium</i>
D	<i>Nicotiana tabacum</i>
E	<i>Datura innoxia</i>
№	krok 2009
Topic	plant anathomy
Task	Microscopy of a leaf epidermis of <i>Convallaria majalis</i> showed that the stomata had four accessory cells. Two of them were lateral, and two other were polar. What type of stomatal mechanism is it?
Correct answer	Tetracytic
B	Diacytic
C	Anisocytic

D	Anomocytic
E	Paracytic
№	krok 2009
Topic	plant morphology
Task	Examination of a medicinal herb revealed that its leaves were divided down to the base of the leaf blade with segments radiating from a common point in a fan manner. These leaves are:
Correct answer	Palmatisected
B	Pinnatisected
C	Palmatipartite
D	Pinnatipartite
E	Palmatilobate
№	krok 2008
Topic	seed plants
Task	Morphological analysis of an inflorescence revealed that its flowers were attached to the same axis at different levels but due to different length of peduncle they grew in the same plane. Such inflorescence is called:
Correct answer	<i>Corymb</i>
B	<i>Anthodium</i>
C	<i>Glomus</i>
D	<i>Umbel</i>
E	<i>Spike</i>
№	krok 2008
Topic	seed plants
Task	An essential oil plant under examination has tetraquetrous stalk, flowers with bilabiate corolla, coenobium fruit. These characteristics are typical for the following family:
Correct answer	<i>Lamiaceae</i>
B	<i>Papaveraceae</i>
C	<i>Polygonaceae</i>
D	<i>Solanaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2008
Topic	plant morphology

Task	Examination of an inflorescence of sweet flag <i>Acorus calamus L.</i> revealed that it was encircled with a covering leaf (spathe) and small sessile flowers grew compactly on the thickened pulpy axis. Such inflorescence is called:
Correct answer	<i>Ear</i>
B	<i>Glomus</i>
C	<i>Spike</i>
D	<i>Umbel</i>
E	<i>Corymb</i>
№	krok 2008
Topic	plant anathomy
Task	Pulp of a needle leaf consists of living tissue with inner ansiform protuberances of membrane and chloroplasts along them. What is type of this leaf's parenchyma?
Correct answer	Plicate
B	Spongioid
C	Palisade
D	Storage
E	Aeriferous
№	krok 2008
Topic	seed plants
Task	A herbaceous plant under examination has segmented laticifers with anastomoses filled with white latex. This is typical for:
Correct answer	<i>Taraxacum officinale</i>
B	<i>Urtica dioica</i>
C	<i>Chelidonium majus</i>
D	<i>Anethum graveolens</i>
E	<i>Thymus vulgaris</i>
№	krok 2008
Topic	seed plants
Task	Which of the following plants has pome fruit?
Correct answer	<i>Sorbus aucuparia</i>
B	<i>Prunus domestica L.</i>
C	<i>Amygdalus communis</i>
D	<i>Rosa majalis</i>

E	Prunus padus
№	krok 2008
Topic	plant morphology
Task	Apical bud of a sprout stops its development early and growth is realized due to two lateral buds placed opposite one another under the apex. Such ramification is called:
Correct answer	Pseudodichotomic
B	Equidichotomic
C	Monopodial
D	Nonequidichotomic
E	Bush
№	krok 2008
Topic	plant anathomy
Task	Anatomico-histochemical analysis of a petiole revealed living parenchyma cells with cellulose, angular thickened membranes under the epiderm and above the fascicle. This is typical for:
Correct answer	Angular collenchyma
B	Spongy perenchyma
C	Lamellar collenchyme
D	Lacunar collenchyme
E	Bast fibers
№	krok 2008
Topic	parasitology
Task	A 13 year old child complains about poor appetite, pain in the right subcostal area. Microscopical examination of duodenal contents revealed big pyriform cells with two nuclei. What microorganism was revealed?
Correct answer	Lambliia
B	Trichomonad
C	Amoeba
D	Trypanosoma
E	Toxoplasma
№	krok 2008
Topic	plant anathomy

Task	Microscopical examination of a leaf revealed water stomata on its serration. These stomata are for exudation of liquid-drop moisture. This process is called:
Correct answer	Guttation
B	Gas exchange
C	Internal secretion
D	Transpiration
E	Photosynthesis
№	krok 2008
Topic	seed plants
Task	An annual plant of the <i>Asteraceae</i> family has tripartite leaves, apical anthodia with tubular flowers, flat achenocarps that are tenent due to 2-3 bristly serratures. This plant is:
Correct answer	<i>Bidens tripartita</i>
B	<i>Chamomilia recutita</i>
C	<i>Centaurea cyanus</i>
D	<i>Echinacea purpurea</i>
E	<i>Artemisia vulgaris</i>
№	krok 2008
Topic	seed plants
Task	Crop production includes cultivation of medicinal essential oil plants that don't grow in Ukraine wildely, namely <i>Mentha piperita</i> , <i>Ortosiphon stamineus</i> , and also:
Correct answer	<i>Salvia officinalis</i>
B	<i>Origanum vulgare</i>
C	<i>Leonurus cardiaca</i>
D	<i>Thymus serpyllum</i>
E	<i>Leonurus quinquelobatus</i>
№	krok 2008
Topic	plant morphology
Task	Microscopical examination of transverse section of a root revealed investing tissue consisting of thin-walled, closely joining cells with root fibrilla. This tissue is called:
Correct answer	Epiblem
B	Root cap (pileorhiza)

C	Periderm
D	Endoderm
E	Epiderm
№	krok 2008
Topic	plant morphology
Task	Monopodial inflorescences of plantain (spike) and maize (ear) have one trait in common: their flowers are placed on the well-developed principal axis. This is typical for the following inflorescences:
Correct answer	Simple botrioid
B	Complex botrioid
C	Cymose
D	Aggregate
E	Thyrsoid
№	krok 2008
Topic	plant morphology
Task	A leaf has glumaceous ochrea. It clasps bottom of internode and is a modified stipule. This is diagnostic sign of the following family:
Correct answer	<i>Polygonaceae</i>
B	<i>Gramineae</i>
C	<i>Rosaceae</i>
D	<i>Legumes</i>
E	<i>Solanaceae</i>
№	krok 2008
Topic	plant morphology
Task	You need to specify a monocarpous one-seeded fruit with hard scleroid endocarp and soft mesocarp. This fruit is:
Correct answer	<i>Monodrupe</i>
B	<i>Legume</i>
C	<i>Silique</i>
D	<i>Capsule</i>
E	<i>Bacca</i>
№	krok 2007
Topic	plant anatomy

Task	Microscopic examination of a root cortex in the absorbing zone revealed that it consists mainly of multilayer living loose parenchyma with starch granules. This is:
Correct answer	Mesoderm
B	Endoderm
C	Exoderm
D	Collenchyme
E	Phellogen
№	krok 2007
Topic	Polypodiophyta
Task	A plant under examination has a rhi-zome, big pinnatisected leaves with sori and sporangia on their undersurface. According to this data the plant should be related to one of the following divisi-ons:
Correct answer	<i>Polypodiophyta</i>
B	<i>P inophyta</i>
C	<i>M agnoliophyta</i>
D	<i>Eguisetophyta</i>
E	<i>Lycopodiophyta</i>
№	krok 2007
Topic	plant morphology
Task	Leaves of a plant under examination have a distinct main nerve in the middle with regularly diverging side nerves. What type of nervation is it?
Correct answer	Pinnate
B	Digitate
C	Arcwise
D	Parallel
E	Dichotomic
№	krok 2007
Topic	seed plants
Task	An essential oil plant has a tetraquetrous stem, flowers with bilabiate corolla, its fruit is coenobium. These signs are typical for the following family:
Correct answer	<i>Lamiaceae</i>
B	<i>P apaveraceae</i>

C	<i>Polygonaceae</i>
D	<i>Solanaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2007
Topic	plant anatomy
Task	Pulp of a needle leaf consists of living tissue with internal ansiform outgrowths of membrane. Along these outgrowths the chloroplasts are placed. Name the type of this leaf's parenchyma:
Correct answer	Folded
B	Spongy
C	Palisade
D	Storage
E	Aeriferous
№	krok 2007
Topic	seed plants
Task	A plant under examination has a storage root; its stems are ribbed and channelled, hollow; leaves are many ti-mes pinnatisected, leafstalk has a boot; inflorescence is the compound umbel; fruit is the cremocarp with essential oil canaliculi in the pericarp. Such characteristics are typical for the plants of the following family:
Correct answer	<i>Apiaceae</i>
B	<i>Solanaceae</i>
C	<i>Fabaceae</i>
D	<i>Brassicaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2007
Topic	plant morphology
Task	One of fleshy fruits under examination is characterized by essential oil exocarp, spongy mesocarp and overgrown endocarp consisting of juice sacs. What fruit was examined?
Correct answer	Hesperidium
B	Pepo
C	Cinarodium
D	Drupe
E	Bacca

№	krok 2007
Topic	plant morphology
Task	A sour cherry has shortened principal axis of inflorescence, pedicles have nearly equal length and emerge like from the same point. It is typical for the following type of inflorescence:
Correct answer	Umbel
B	Corymb
C	Truss
D	Ear
E	Anthodium
№	krok 2007
Topic	plant anatomy
Task	Section of <i>Helianthus annuus</i> root has a secondary fascicular formation, it means that the section was made in the zone of:
Correct answer	Fortification and conduction
B	Growth and elongation
C	Absorption
D	Fissionable cells
E	Root cap
№	krok 2007
Topic	plant cells morphology
Task	It is known that bluish purple petal coloration of a plant under examination varies up to pink or light pink according to <i>pH</i> of cellular fluid of vacuole. It is caused by presence of:
Correct answer	Anthocyanins
B	Carotins
C	Xanthophylls
D	Phycobilins
E	Chlorophylls
№	krok 2007
Topic	plant anatomy
Task	Microscopic examination of a stem of a perennial plant revealed integumentary tissue of secondary origin that was formed as a result of activity of:
Correct answer	Phellogen

B	Procambium
C	Cambium
D	Pericycle
E	Protoderm
№	krok 2007
Topic	parasitology
Task	A smear from frothy and purulent vaginal discharges of a 42 y.o. woman was stained by Romanovsky-Giemsa method. Its analysis revealed some microorganisms of flagellates class. What microorganisms were the most probably revealed?
Correct answer	<i>Trichomonas vaginalis</i>
B	<i>Leishmania donovani</i>
C	<i>Trypanosoma gambiense</i>
D	<i>Trichomonas hominis</i>
E	<i>Lamblia intestinalis</i>
№	krok 2007
Topic	plant anatomy
Task	When studying a stem covered with periderm a researcher came to conclusion that gaseous exchange takes place through:
Correct answer	Lenticels
B	Stomata
C	Pores
D	Throughput cells
E	Hydatodes
№	krok 2007
Topic	algae
Task	A macroscopic alga of brown colour with trunk, rhizoids and foliaceous part rich in alginates and iodine is ranked with genus of:
Correct answer	<i>Laminaria</i>
B	<i>Chlorella</i>
C	<i>Chlamydomonas</i>
D	<i>Sirogira</i>
E	<i>Ulothrix</i>
№	krok 2007
Topic	plant anatomy

Task	Microscopic examination of a leaf revealed on its serratures some water stomata that serve the purpose of liquid-drop moisture excretion, that is the process of:
Correct answer	Guttation
B	Gaseous exchange
C	Internal secretion
D	Transpiration
E	Photosynthesis
№	krok 2007
Topic	plant cells morphology
Task	Destruction of intercellular substance and cell breakaway in overripe fleshy fruits is a result of:
Correct answer	Maceration
B	Lignification
C	Mineralization
D	Sliming
E	Gummosis
№	krok 2007
Topic	plant cells morphology
Task	A vegetational microspecimen was treated with Sudan III solution. As a result of it cell membranes turned pink that means they contain:
Correct answer	Suberin
B	Cellulose
C	Lignin
D	Pectin
E	Hemicellulose
№	krok 2007
Topic	plant morphology
Task	One of the common characteristics of subfamily <i>Prunoideae</i> representatives (family <i>Rosaceae</i>) is that their fruit is:
Correct answer	Drupe
B	Aggregate-accessory fruit
C	Bacca
D	Pome
E	Pepo

№	krok 2007
Topic	seed plants
Task	Essential oil glandules that consist of 8 secretory cells placed in 2 lines and 4 tiers are typical for most plants of the following family:
Correct answer	<i>Asteraceae</i>
B	<i>Apiaceae</i>
C	<i>Lamiaceae</i>
D	<i>Rosaceae</i>
E	<i>Scrophulariaceae</i>
№	krok 2018
Topic	plant taxonomy / family Polygonaceae
Task	A food plant of <i>Polygonaceae</i> family is being studied. The plant has reddish stalk, cordatesagittate leaves, its fruit is a trihedral nutlet. Name this plant:
Correct answer	<i>Fagopyrum esculentum</i>
B	<i>Persicaria bistorta</i>
C	<i>Persicaria hydropiper</i>
D	<i>Polygonum aviculare</i>
E	<i>Rumex confertus</i>
№	krok 2018
Topic	plant taxonomy / Asteraceae family
Task	Microscopy of subterranean organs of an <i>Asteraceae</i> family plant shows articulated laticifers with anastomoses filled with white latex. It is characteristic of the following plant:
Correct answer	<i>Taraxacum officinale</i>
B	<i>Helianthus annuus</i>
C	<i>Artemisia absinthium</i>
D	<i>Bidens tripartita</i>
E	<i>Achillea millefolium</i>
№	krok 2018
Topic	the structure of the plant cell, derivate of protoplasts
Task	It is known that in plants the synthesis of secondary reserve starch occurs in:
Correct answer	Amyloplasts
B	Chloroplasts

C	Chromoplasts
D	Elaioplasts
E	Proteinoplasts
№	krok 2018
Topic	plant tissue
Task	A sample section of an axial body shows a complex consisting of phellogen and its derivatives - cork and phelloderm. Name this tissue:
Correct answer	Periderm
B	Colenchyma
C	Sclerenchyma
D	Epiblema
E	Epidermis
№	krok 2018
Topic	the structure of the plant cell, derivate of protoplasts
Task	Racemose clusters of calcium carbonate crystals are detected among the waste products of a protoplast. These crystals are:
Correct answer	Cystoliths
B	Isolated crystals
C	Raphides
D	Styloid crystals
E	Crystal druses
№	krok 2018
Topic	plant taxonomy / Rosaceae family
Task	A fruit tree of <i>Rosaceae</i> family has short thorny shoots; the fruit is a distinctivelyshaped pome with stone cells in its pulp. Name this plant:
Correct answer	<i>Pyrus communis</i>
B	<i>Malus sylvestris</i>
C	<i>Cerasus vulgaris</i>
D	<i>Prunus armeniaca</i>
E	<i>Prunus spinosa</i>
№	krok 2018
Topic	the structure of the plant cell, derivate of protoplasts

Task	Morphologically the herbaceous plant being studied can be identified as <i>Convallaria majalis</i> . To confirm this conclusion additionally, a leaf of this plant was examined under the microscope and a search for the following crystalline inclusions was conducted:
Correct answer	Raphides
B	Single crystals
C	Druse crystals
D	Styloid crystals
E	Crystal sand
№	krok 2018
Topic	anatomical structure of a root
Task	What type of conducting bundle is characteristic of primary anatomical structure of a root?
Correct answer	Radial
B	Concentric
C	Closed collateral
D	Bicollateral
E	Open collateral
№	krok 2018
Topic	plant taxonomy / Asteraceae family
Task	<i>Calendula officinalis</i> as a representative of <i>Asteraceae</i> family can be characterized by the following type of inflorescence:
Correct answer	Anthodium
B	Umbel
C	Catkin
D	Capitulum
E	Corymb
№	krok 2018
Topic	plant taxonomy / Rosaceae family
Task	Herbarium specimens of medicinal plants are being studied. Which one of them belongs to <i>Rosaceae</i> family?
Correct answer	<i>Crataegus sanguinea</i>
B	<i>Melilotus officinalis</i>
C	<i>Conium maculatum</i>
D	<i>Capsella bursa-pastoris</i>
E	<i>Polygonum persicaria</i>

№	krok 2018
Topic	fundamentals of plant ecology and geobotany
Task	A certain herbaceous plant grows on the meadows of the Carpathian Mountains. It has orange anthodium inflorescences, upright stem, and a rosette of basal leaves. Name this plant:
Correct answer	<i>Arnica montana</i>
B	<i>Cyborium intybus</i>
C	<i>Calendula officinalis</i>
D	<i>Echinacea purpurea</i>
E	<i>Centaurea cyanus</i>
№	krok 2018
Topic	plant taxonomy / Asteraceae family
Task	You are studying a silvery downy plant of <i>Asteraceae</i> family, which is rich in essential oils and bitters. Harvested are the apical sprouts with a panicle of small round flower heads. This plant is:
Correct answer	<i>Artemisia absinthium</i>
B	<i>Arctium lappa</i>
C	<i>Bidens tripartita</i>
D	<i>Calendula officinalis</i>
E	<i>Chamomilla recutita</i>
№	krok 2018
Topic	flower
Task	Upon examination of a flower it is determined to have one pistil made up of single free carpel. Therefore, this gynoecium can be identified as:
Correct answer	Monocarpous
B	Apocarpous
C	Lysicarpous
D	Paracarpous
E	Syncarpous
№	krok 2018
Topic	flower
Task	One of the important diagnostic features of garden sage and motherwort is their shape of corolla. Their flowers have the following type of corolla:

Correct answer	Bilabiate
B	Thimble-shaped
C	Funnelform
D	Pseudoligulate
E	Ligulate
№	krok 2018
Topic	flower
Task	Students should identify the following to determine the sex of a flower:
Correct answer	Stamens and pistils
B	Flower cup and corolla
C	Pedicle and receptacle
D	Symmetry
E	Color and type of indumentum
№	krok 2018
Topic	plant taxonomy / family Asteraceae
Task	In spring a perennial plant of Asteraceae family produces floral shoots with golden-yellow flowers. After blossom-fall, shoots with large leaves appear. Name this plant:
Correct answer	<i>Tussilago farfara</i>
B	<i>Hypericum perforatum</i>
C	<i>Potentilla erecta</i>
D	<i>Petroselinum crispum</i>
E	<i>Datura stramonium</i>
№	krok 2018
Topic	plant taxonomy / family Linaceae
Task	A fruit is a capsule with oblate light brown smooth glossy seeds that mucify when moistened. This fruit belongs to:
Correct answer	<i>Linum usitatissimum</i>
B	<i>Hypericum perforatum</i>
C	<i>Ledum palustre</i>
D	<i>Linaria vulgaris</i>
E	<i>Digitalis purpurea</i>
№	krok 2018

Topic	plant taxonomy / family Asteraceae
Task	Rhizome of an <i>Asteraceae</i> family species is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characteristic of:
Correct answer	<i>Inula helenium</i>
B	<i>Hyoscyamus niger</i>
C	<i>Digitalis grandiflora</i>
D	<i>Sorbus aucuparia</i>
E	<i>Helianthus annuus</i>
№	krok 2018
Topic	medicinal plants, which grow in Ukraine
Task	Some medicinal plants are poisonous. Select a poisonous plant from the list below:
Correct answer	<i>Digitalis purpurea</i>
B	<i>Origaum vulgare</i>
C	<i>Thymus serpyllum</i>
D	<i>Salvia officinalis</i>
E	<i>Thymus vulgaris</i>
№	krok 2018
Topic	plant taxonomy / family Rhamnaceae
Task	A certain dioecious plant commonly grows at the forest edge. It is a shrub with thorned sprouts. Its fruit is a round black coenocarpous drupe (pyrenarium) with 3-4 seeds. Name this plant:
Correct answer	<i>Rhamnus cathartica</i>
B	<i>Hippophae rhamnoides</i>
C	<i>Crataegus sanguinea</i>
D	<i>Rosa canina</i>
E	<i>Sambucus nigra</i>
№	krok 2018
Topic	plant cell, the structure of the cell wall, secondary changes of the cell wall
Task	Name the process of cell membrane saturation with a fat-like substance - suberin:
Correct answer	Suberization
B	Lignification
C	Mineralization

D	Cutinization
E	Mucification
Topic	krok 2020
Task	Plants that grow in moderately humid conditions belong to the following ecological group:
Correct answer	Mesophytes
B	Hydrophytes
C	Hygrophytes
D	Xerophytes
E	Succulents
№	krok 2020
Topic	plant taxonomy / Family Fabaceae
Task	Among the trees of Fabaceae family there is an early-flowering melliferous plant with pinnately compound leaves, spine-shaped stipules, and white fragrant flowers arranged in hanging racemes. Name this plant:
Correct answer	Robinia pseudoacacia
B	Armeniaca vulgaris
C	Aesculus hippocastanum
D	Aronia melanocarpa
E	Quercus robur
№	krok 2020
Topic	plant taxonomy / Family Brassicaceae
Task	Select a Brassicaceae family plant that contains glycosides similar in action to those obtained from foxglove:
Correct answer	Erysimum canescens
B	Arctostaphylos uva-ursi
C	Urtica dioica
D	Polygonum aviculare
E	Primula officinalis
№	krok 2020
Topic	plant taxonomy / Family Brassicaceae
Task	Among harvested plants there was Capsella bursa-pastoris, which can be characterized as follows:
Correct answer	Annual plant, basal leaves - pinnatisected or pinnatipartite, fruit - small triangular heart-shaped silique
B	Biennial plant, basal leaves - pinnatilobate, fruit - small round silique

C	Perennial plant, basal leaves - entire-kind, fruit - cylindric silique
D	Annual plant, basal leaves - compound, fruit - segmented silique
E	Biennial plant, basal leaves - membranous, fruit - small winged heart-shaped silique
№	krok 2020
Topic	
Task	Berberis vulgaris has spines that are modifications of:
Correct answer	Leaves
B	Stipules
C	Petioles
D	Stems
E	Rachises
№	krok 2020
Topic	the structure of the plant cell, derivate of protoplasts
Task	In monocotyledonous plants metabolism end-products are often represented by multiple needle crystals of calcium oxalate arranged in clusters. Name these structures:
Correct answer	Raphides
B	Druses
C	Styloids
D	Twinned crystals
E	Crystalline sand
№	krok 2020
Topic	flower
Task	Name the male gametophyte of flowering Plants:
Correct answer	Pollen grains
B	Carpel
C	Embryo sac
D	Ovule
E	Nucellus
№	krok 2020
Topic	Morphology of generative organs

Task	A gastric tea contains small oval brown lignified cone-shaped plant parts up to 1.5 cm in length that can be identified as:
Correct answer	Aggregate fruits of alnus
B	Larch cones
C	Cypress cones
D	Berry-like juniper cones
E	Platycladus orientalis cones
№	krok 2020
Topic	Plant taxonomy
Task	A diagnostic feature important for correct identification of pine species is the number of needles on the short shoots (brachyblasts). Pinus sylvestris has the following number of needles on its short Shoots:
Correct answer	2.00
B	5.00
C	3.00
D	8.00
E	Many
№	krok 2020
Topic	plant taxonomy / Family Fabaceae
Task	In pharmaceutical manufacturing, rutin and quercetin are obtained from the flowers of a certain Fabaceae family plant. Name this plant:
Correct answer	Styphnolobium japonicum
B	Robinia pseudoacacia
C	Caragana arborescens
D	Astragalus piletocladus

E	Acacia dealbata
№	krok 2020
Topic	plant taxonomy / Family Fabaceae
Task	A cough tea contains comminuted roots of a plant. The roots are colored bright yellow and taste sweet. They were identified as roots of the following plant:
Correct answer	Glycyrrhiza glabra
B	Althaea officinalis
C	Acorus calamus
D	Valeriana officinalis
E	Sanguisorba officinalis
№	krok 2020
Topic	fruits
Task	Nuciform fruits include a certain type of one-seeded fruit that does not burst when ripe. Its base is enclosed in a cup-shaped cupule formed by the broad part of the peduncle to which the flower was attached. Name this type of fruit:
Correct answer	Acorn
B	Nut
C	Nutlet
D	Samara
E	Caryopsis
№	krok 2020
Topic	flower, inflorescences
Task	Plantago major inflorescence grows at the apex, its rachis is long, with sessile flowers. Name this type of inflorescence:
Correct answer	Spike
B	Panicle
C	Spadix
D	Capitulum
E	Thyrse
№	krok 2020
Topic	flower
Task	Upon examination of a flower it is determined to have one pistil made up of single free carpel. Therefore, this gynoecium can be identified as:

Correct answer	Monocarpous
B	Apocarpous
C	Lysicarpous
D	Paracarpous
E	Syncarpous
№	krok 2020
Topic	plant taxonomy / Family Lamiaceae (Labiatae)
Task	One of the important diagnostic features of garden sage and motherwort is their shape of corolla. Their flowers have the following type of corolla:
Correct answer	Bilabiate
B	Thimble-shaped
C	Funnelform
D	Pseudoligulate
E	Ligulate
№	krok 2020
Topic	plant taxonomy / Family Asteraceae
Task	Rhizome of an Asteraceae family species is polycephalous, succulent, has lysigenous cavities, accumulates inulin. Such underground organ is characteristic of:
Correct answer	Inula helenium
B	Hyoscyamus niger
C	Digitalis grandiflora
D	Sorbus aucuparia
E	Helianthus annuus
№	krok 2021
Topic	Plant cell
Task	In monocotyledonous plants metabolism end-products are often represented by multiple needle crystals of calcium oxalate arranged in clusters. Name this structures
Correct answer	Raphides
B	Twinned crystals
C	Styloids
D	Crystalline sands

E	Druses
Topic	krok 2021
Task	During morphological analysis,a student noticed that the analyzed flower has two long stamens ant two short ones
Correct answer	Didynamous
B	Diadelphous
C	Syngenesious
D	Tetradynamous
E	Tetradelphous
№	krok 2021
Topic	Plant taxonomy
Task	During morphological description of Salvia sclarea, students noticed its bright bracts. They serve to attract pollinating insects and are a modification of:
Correct answer	leaves
B	androecium
C	shoots
D	pedicles
E	receptacle
№	krok 2021
Topic	Morphology of vegetative organs
Task	A simple leaf is being analyzed. Its lamina is divided and the incisions are deep enough to reach its base. Therefore, this leaf is
Correct answer	Pinnatisect or palmatisect
B	Digitate
C	Ternate
D	Partite
E	Lobate
№	krok 2021
Topic	Plant taxonomy
Task	When studying a herbarium specimen of Persicaria maculosa, the following diagnostic sign, characteristic of all Polygonaceae family representatives, was noted:
Correct answer	Ochrea
B	Legume fruits

C	Essential oil glands
D	No petiols
E	Compound leaves
№	krok 2021
Topic	Plant taxonomy
Task	Essential oil glandules, achene fruits, and capitulum inflorescenes are the characteristic diagnostic characters of the following plant family^
Correct answer	Asteraceae
B	Solanaceae
C	Lamiaceae
D	Rosaceae
E	Scrophylariaceae
№	krok 2021
Topic	Plant taxonomy
Task	Examination of an underground organ of Poligonatum odoratum shows that it is horizontally oriented, uniformly thick and has nodes, internodes, round indentations, and an apical bus. Therefore, it is a:
Correct answer	Rhizome
B	Root crop
C	Underground stolon
D	Root tuber
E	Main root
№	krok 2021
Topic	Plant taxonomy
Task	A swamp plant has gladiate leaves and spadix inflorescences with a bract. Its rhizomes are thick, light, aromatic, pink on section, with clearly visible and closely placed leaf scars and adventitious roots. Those underground organs belong to:
Correct answer	Acorus calamus
B	Valeriana officinalis
C	Ledum palustre
D	Sanguisorba officinalis
E	Bidens tripartita
№	krok 2021

Topic	Plant taxonomy
Task	Every year in autumn, a coniferous gymnosperm exhibits a fall of soft needles that grow on its short shoots. It is characteristic of the following genus:
Correct answer	Larix
B	Abies
C	Pinus
D	Picea
E	Cedrus
№	krok 2021
Topic	Plant taxonomy
Task	A tea for cough relief contains comminuted roots of a plant. The roots are bright yellow and sweet. They were identified as the roots of:
Correct answer	Glycyrrhiza glabra
B	Althaea officinalis
C	Sanguisorba officinalis
D	Acorus calamus
E	Valeriana officinalis
№	krok 2021
Topic	Morphology of generative organs
Task	What type of fruit has a juicy pericarp, is many-seeded, indehiscent and forms from coenocarpous gynoecium&
Correct answer	Hesperidium
B	Coenobium
C	Salique
D	Cynarrhodium
E	Fraga
№	krok 2021
Topic	Plant taxonomy
Task	A herbaceous plant has upright stems, branching in their upper part. The leaves and flowers contain dark cavities. The inflorescence is an apical corymb with yellow flowers. The fruit is a trihedral capsule. The description is a characteristic of:
Correct answer	Hypericum perforatum
B	Capsella bursa-pastoris
C	Thea sinensis

D	<i>Althaea officinalis</i>
E	<i>Ledum palustre</i>
№	krok 2021
Topic	Plant tissues
Task	The stem surface of a woody plant is being studied. It is noted that the cells are parenchymal, dead, with suberized membranes. Therefore, this is:
Correct answer	Cork
B	Phellogen
C	Sclerenchyma fibers
D	Phelloderm
E	Vessels