

1. Загальні питання фармакогнозії.

1. Thymol is the main component of *Thymus serpyllum* essential oil. What is the time of harvesting for this raw herbal material?
 - A. Peak florescence period
 - B. In autumn after above-ground part of a plant dies-off
 - C. During peak of sap movement
 - D. During fruiting
 - E. Beginning of vegetation
2. Intoxication cases were observed during harvesting raw herbal material containing potent and toxic substances. What raw herbal material SHOULD NOT be harvested by underage and pregnant?
 - A. Celandine grass
 - B. Walnut leaves
 - C. Valerian rootstock
 - D. Buckthorn bark
 - E. Blueberries
3. Sage leaves procured for the production of essential oil should be dried at a temperature of:
 - A. 25-30°
 - B. 50-60° C
 - C. 100° C
 - D. 60-70° C
 - E. 70-80° C
4. Leaves of greater plantain are harvested in summer by mowing or cutting them with a knife or a sickle. There is always one developed plant left per 1 m². The plant is harvested in the following vegetation period
 - A. Blooming
 - B. Budding
 - C. Rosetting
 - D. Beginning of fruiting
 - E. Ripeness
5. Admixtures can get into the herbal raw material during harvesting, drying and primary processing. Mineral admixtures include:
 - A. Sand, earth, stones
 - B. Metal objects
 - C. Other similar plants
 - D. Droppings of birds and rodents
 - E. Other organs of the same plant

6. A pharmaceutical warehouse has received a batch of herbal raw material – hawthorn flowers. Merchandise analysis revealed in one of the sacks significant amount of bird-cherry flowers besides the hawthorn. What quality assessment of the herbal raw material should be performed?

- A. Acceptable admixtures
- B. Extractive values
- C. Ash values (Total ash)
- D. Moisture content
- E. Mineral admixtures

7. A certain type of herbal raw material is being collected in spring during sap flow. Specify this material:

- A. Bark**
- B. Flowers
- C. Buds
- D. Infructescences
- E. Roots

2. Polysaccharides.

1. Raw herbal material with the following features was delivered to a laboratory for analysis: fine flat glossy egg-shaped seeds (one end is sharp, other - rounded). Seed surface is smooth, vary in colour from pale yellow to brown, has pale yellow raphe. No smell is detected. The taste is slimy and oily. Name this raw herbal material.

- A. Flax seeds
- B. Pumpkin seeds
- C. Plantago psyllium
- D. Strophanthus seeds
- E. Peanut seeds

2. Plantaglucide is used to treat peptic ulcer disease of stomach and duodenum with normal acidity and hypoacidity. This drug is obtained from the following plant:

- A. Plantago major
- B. Plantago psyllium
- C. Plantago media
- D. Plantago stepposa
- E. Plantago lanceolata

3. Plantain leaves are used for production of Plantaglucidum which has antiulcerogenic action. The plant material analysis involves quantitative determination of the following class of compounds:

- A. Polysaccharides
- B. Vitamins

- C. Amarines
- D. Terpenes
- E. Carotenoids

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- D. Beginning of fruiting
- E. Ripeness

5. The possible admixture in the crop of raw coltsfoot leaves (*Tussilago farfara*) is the leaf of:

- A. Cotton burdock (*Arctium tomentosum*)
- B. Common plantain
- C. Nettle
- D. Marshmallow (*Althaea officinalis*)
- E. *Primula officinalis*

6. A pharmacy depot received a batch of common plantain leaves. According to the requirements of the Pharmacopoeia, this herbal raw material is of adequate quality if it contains the following active substances

- A. Polysaccharides
- B. Flavonoids
- C. Tannins
- D. Anthracene derivatives
- E. Essential oils

7. Coltsfoot preparations are used for upper airways treatment. During procurement of this herbal raw material the following admixture may appear:

- A. Great bur (*Arctium lappa*)
- B. Common plantain (*Plantago major*)
- C. Spring adonis (*Adonis vernalis*)
- D. Marsh mallow (*Althaea officinalis*)
- E. Pot marjoram (*Origanum vulgare*)

8. Upper airways diseases can be treated by means of herbal raw materials containing mucilages. The plant source of this compound class is:

- A. *Radix Althaeae*
- B. *Radix Inulae*
- C. *Radix Ipecacuanhae*
- D. *Radix Rhodiolae*
- E. *Radix Belladonnae*

9. A storehouse received a batch of althaea roots. For its verification a drop of ammonia solution was applied upon the root section; the spot of section turned yellow. This is the evidence of presence of the following substance:

- A. Mucilages
- B. Tannins
- C. Gum
- D. Pectins
- E. Vitamin C

3. Lipids

1. Fatty oils containing unsaturated fatty acids are used for the prophylaxis of atherosclerosis. Specify the starting materials of herbal origin that contain fatty oil:

- A. Pumpkin seed
- B. Ispaghula seed
- C. Chestnut seed
- D. Parsnip fruits
- E. Psoralea fruits

2. Fatty oil containing saturated fatty acids is used for atherosclerosis prevention. Specify the medicinal plant that is used for oil production:

- A. Flax seeds
- B. Fennelflower seeds
- C. Dill seeds
- D. Black chokeberry fruits
- E. Hawthorn fruits

3. Fatty oil containing unsaturated fatty acids are used for atherosclerosis prevention. What herbal raw material contains such fatty oil?

- A. Cucurbit seeds
- B. Buckhorn plantain (*Plantago lanceolata*) seeds
- C. Chestnut (*Castanea*) seeds
- D. Parsnip fruitages
- E. Scurfy pea (*Psoralea*) fruitages

4. The cholagogue derived from *Rosa canina* fruit is used in treatment of liver and gallbladder diseases. Name this drug:

- A. Cholosas**
- B. Phytolyt
- C. Chophytol
- D. Altan
- E. Allochol

4. Vitamins

1. Stinging nettle (*Urtica dioica*) leaves are mostly used as a hemostatic in tinctures and liquid extract to treat lung, intestinal, and uterine hemorrhages. What bioactive substance provides hemostatic effect?

- A. Vitamin K
- B. Beta-carotene
- C. Rutin
- D. Reserpine
- E. Digitoxin

2. The following fruit was received for analysis: succulent drupes circular or elongated-ellipsoid in shape, 4-12 mm in length. The colour of fruit varies from yellow to dark orange. The smell is faint. The taste is sour-sweet. What plant is it?

- A. *Hippophae rhamnoides*
- B. *Ammi majus*
- C. *Aronia melanocarpa*
- D. *Vaccinium myrtillus*
- E. *Coriandrum sativum*

3. Pharmaceutical warehouse received a batch of herbal raw material of cinnamon rose. Under the State Pharmacopoeia, it is required to test this raw material for the following active substances:

- A. Ascorbic acid
- B. Flavonoids
- C. Tannins
- D. Anthracene derivatives
- E. Essential oil

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- B. Phytolyt
- C. Chophytol
- D. Altan
- E. Allochol

Proteins

1. Snake venom-based drugs are widely applied in treatment of locomotor apparatus diseases. Main components of these venoms are:

- A. Toxic proteins**
- B. Glucosinolates
- C. Alkaloids
- D. Phenol-alcohols
- E. Cardiac glycosides

5. Іридоїди, ефірні олії

1. The following raw herbal material was delivered for analysis: capitulum inflorescence is semicircular or conic in shape; no pedicles or only their remains; floral disk is naked, conic, hollow. Semiflorets are white, disk florets are yellow, involucre are yellow-green. The smell is specific, aromatic. The taste is bitter-spicy. What raw herbal material is it?

- A. Flores Chamomillae
- B. Flores Arnicae
- C. Flores Calendulae
- D. Flores Helichrysi arenarii
- E. Flores Millefolii

2. Thymol is the main component of *Thymus serpyllum* essential oil. What is the time of harvesting for this raw herbal material?

- A. Peak florescence period
- B. In autumn after above-ground part of a plant dies-off
- C. During peak of sap movement
- D. During fruiting
- E. Beginning of vegetation

3. An essential oil is a component of such compound drugs as: Inhalypt, Corvalol, Pinosol, Corvaldin, tooth drops. What raw herbal material is a source of this essential oil?

- A. Folia Menthae piperitae
- B. Folia Betulae
- C. Folia Urticae
- D. Folia Agavae
- E. Folia Absinthii

4. Yellow gentian contains bitter glycosides. Raw material of this plant is recommended for production of drugs with the following effect:

- A. Stimulates appetite
- B. Tonic
- C. Diuretic
- D. Hepatoprotective
- E. Venotonic

5. A pharmacy received a prescription for tincture. What raw herbal material can be used to make this dosage form?

- A. Valerian rootstock
- B. Rhubarb roots
- C. Oak bark
- D. Arrow-wood bark
- E. Buckthorn bark

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7. A teenager with hyporexia has been recommended to drink medicinal herbal tea of the following composition: *Herba Absinthii*, *Herba Millefolii*. Specify the characteristic microscopic features of *Artemisia absinthium*, which indicate its presence in the herb mixture:

- A. T-shaped hairs along the leaf edge
- B. Simple and capitate hairs
- C. Branched, simple and ciliated hairs
- D. Retor-shaped hairs
- E. Branched and capitate hairs

8. Menthol has anesthetic and antiseptic effect. What plant is the source of menthol?

- A. *Folia Menthae piperitae*
- B. *Folia Uvae ursi*
- C. *Folia Eucalypti*
- D. *Folia Salviae*
- E. *Folia Absinthii*

9. Thyme grass is used for production of herbal medical products for treatment of respiratory tract infections. Under the State Pharmacopoeis of Ukraine, the raw herbal material is subject to chromatographic identification by means of thin-layer chromatography. What substances are detected on the chromatographic plate after its treatment with due reagent?

- A. Thymol and carvacrol
- B. Atropine and hyoscyamine
- C. Quercetin and rutin
- D. Apigenin and luteolin
- E. Arbutin and methyl arbutin

10. Sage leaves procured for the production of essential oil should be dried at a temperature of:

- A. 25-30°C
- B. 50-60°C
- C. 100°C
- D. 60-70°C
- E. 70-80°C

11. After harvesting the calamus rhizomes the received material should be dried. What temperature range is required for obtaining good-quality raw material?

- A. 35-40°C
- B. 40-60°C
- C. 60-70°C

D. 70-80°C

E. 80-90°C

12. A pharmacy has no quinquelobate motherwort in stock. It can be substituted by the following herbal material:

A. Rhizomes and roots of valerian

B. Linden flowers

C. Beggarticks grass

D. Raspberry fruits

E. Hypericum grass

13. Flower buds of clove contain the essential oil used for production of herbal antiseptics. Under the State Pharmacopoeia of Ukraine, the raw materials are identified by the method of thin layer chromatography. What zones can be identified on the chromatographic plate after their treatment with reagent?

A. Eugenol and caryophyllene

B. Quercetin and rutin

C. Hyoscyamine and scopolamine

D. Apigenin and luteolin

E. Scopoletin and umbeliferon

14. A pharmacy procured common origanum. What drying conditions should be applied for producing high quality crude drug?

A. 35 – 40°C

B. 80 – 90°C

C. 60 – 70°C

D. 50 – 60°C

E. 70 – 80°C

15. Calamus rhizome is likely to be confused with some other plant rhizome that can be found as an admixture in the herbal raw material. Specify the most likely admixture:

A. Iris rhizome

B. Valerian rhizome

C. Elecampane roots

D. Althaea roots

E. Phlojodicarpus roots

16. A biennial or perennial plant from the Apiaceae family has a blue-grey stem branching in its lower part. Its leaves are also blue-grey, finely dissected, with the ultimate filiform segments. The flowers are yellow, in compound umbels. Its fruit is used for production of "dill water". What plant is it?

A. *Foeniculum vulgare*

B. *Carum carvi*

C. *Petroselinum crispum*

D. *Coriandrum sativum*

E. *Conium maculatum*

17. Common juniper is applied as a diuretic, anti-inflammatory and cholagogic agent. This plant gives the following medicinal raw material:

- A. Fruits
- B. Sprouts
- C. Leaves
- D. Roots
- E. Seeds

18. One of the ways to derive essential oil is enfleurage, or maceration. Essential oil can be derived by enfleurage from the following herbal raw material:

- A. Petals of Damascus rose
- B. Lemon skin
- C. Coriander fruits
- D. Mint leaves
- E. Camomile flowers

19. 1,8 – cineole is bactericidal component of essential oil. Specify the medicinal herb that is grown in Ukraine and contains 1,8- cineole in its essential oil:

- A. Salvia officinalis**
- B. Inula helenium
- C. Origanum vulgare
- D. Juniperus communis
- E. Eucalyptus globulus

20. Complex drug product Urolesan is a litholytic, antispasmodic and diuretic agent. It contains extract of:

- A. Origanum vulgare**
- B. Matricaria chamomilla
- C. Rhododendron tomentosum
- D. Thymus serpyllum
- E. –

21. Birch buds are used as a diuretic. Quality of the herbal raw materials is determined by its content of:

- A. Essential oil**
- B. Lipids
- C. Vitamins
- D. Saponins
- E. Iridoids

22. Essential oil of certain plant contains up to 80% of cineole. Specify the herbal raw material that is collected from this plant;

- A. Folia Eucalypti**
- B. Folia Betulae
- C. Folia Melissa
- D. Folia Menthae piperitae

E. Folia Absinthii

6. Сапоніни

1. A dispensing chemist can recommend a drug made from seeds of *Aesculus hippocastanum* to be taken as a veintonic and antithrombotic agent to treat venous congestion and veins dilatation of lower extremities. This drug is:

- A. Aescusan
- B. Phytolysin
- C. Flamin
- D. Marelin
- E. Ajmaline

2. Drug plant *Dioscorea nipponica* is the starting materials for the production of Polysponinum drug which is used in the complex treatment of atherosclerosis. Specify the active compounds of dioscorea:

- A. Steroid saponins
- B. Alkaloids
- C. Essential oil
- D. Cardiac glycosides
- E. Triterpene saponins

3. Preparations made out of *eleutherococcus* roots and rhizomes are administered as a tonic and adaptogenic drug. If these preparations cannot be found in a pharmacy, they can be substituted by the analogous preparations made of the following raw material:

- A. Ginseng roots
- B. Elecampane roots
- C. Rhizomes and roots of valerian
- D. Polemonium roots
- E. *Acorus calamus* roots

4. On the base of licorice root different drug dosage forms are produced, notably tablets, powders, syrups, teas. The only unused form is injection solution. Licorice roots exhibit haemolytic properties typical for the following active substances

- A. Saponins
- B. Alkaloids
- C. Essential oils
- D. Iridoids
- E. Polysaccharides

7. Серцеві глікозиди

1. Standard raw herbal material of lily-of-the-valley is obtained by drying it at a temperature of 50-60°C in order to prevent the possibility of the following biochemical process:

- A. Enzymatic hydrolysis of cardiac glycosides

- B. Oxidation of phenolic compounds
- C. Volatilization of essential oils
- D. Oxidation of resins
- E. Oxidation of terpenoids

2. Cumulating drugs - Digitoxin and Cordigitum - are used to treat chronic cardiac insufficiency. What plant is used as a raw material to produce them?

- A. Digitalis purpurea
- B. Strophanthus kombe
- C. Adonis vernalis
- D. Convallaria majalis
- E. Erysimum canescens

3. Preparations containing cardiosteroids are produced out of the following raw herbal material:

- A. Herba Convallariae
- B. Cortex Quercus
- C. Radix Taraxaci
- D. Folia Ficus Caricae
- E. Folia Sennae

4. What drug from the group of cardiac glycosides can be used as an alternative for strophanthine if it is not available at a pharmacy?

- A. Corglycon
- B. Isolanidum
- C. Digitoxin
- D. Adonisidum
- E. Celanidum

5. Woolly foxglove is used as raw material for the production of the following drug:

- A. Lantosidum
- B. Corglycon
- C. Digitoxin
- D. Adonizid
- E. Erysimosidum

6. Lily of the valley is widely regarded as a cardiac stimulant and sedative. During the raw material procurement, the following plant may occur in the harvested crop

- A. Round-leaved pyrola
- B. Spring adonis
- C. Treacle-mustard (*Erysimum cheiranthoides*)
- D. *Viola tricolor*
- E. *Viola arvensis*

7. One of the methods of quantitative analysis of active substances in the raw material is the biological standardization. It can be applied with the following group of biologically active substances:

- A. Cardiac glycosides
- B. Alkaloids
- C. Fatty oils
- D. Tannins
- E. Mucilages

8. Cardioglycosides of *Adonis vernalis* are used for heart failure treatment. This plant raw material should be stored:

- A. According to the list B
- B. According to the list A
- C. Under normal conditions
- D. Protected from CO₂
- E. In metal containers

9. *Adonis*-derived drugs are popular cardiotonic agents. The stock of *adonis* herbal raw material is assessed by the method of:

- A. Model specimen
- B. Geodesic
- C. Permanent quadrates
- D. By eye
- E. Projective cover

Гликозиды

1. A substance was received for analysis. The substance is a round seed 1-1,8 mm in diameter, yellow with bluish tint. When mashed with water, emits characteristic irritant odor; is sharp and acrid to taste. The material can be identified as:

- A. Mustard seeds**
- B. Fenugreek seeds
- C. *Nigella* seeds
- D. Flax seeds
- E. *Plantago psyllium* seeds

8. Прості феноли

1. A patient came to a pharmacy to purchase cowberry leaves. Which of the available herbal raw materials can be offered as a substitute?

- A. *Folium Uvae ursi*
- B. *Rizoma Calami*
- C. *Rizoma et radix Sanquisorbae officinalis*
- D. *Herba Achilleae millefolii*

E. Radix Taraxaci officinalis

2. A student has been prescribed a tonic. This may be the tincture of the following medicinal plant:

- A. Rhodiola rosea
- B. Common yarrow
- C. Java tea (orthosiphon aristatus)
- D. Purple foxglove
- E. Black locust

9. Лігнани, ксантони, кумарини, хромони

1. Coumarins are natural compounds with their structure based on an benzo-alpha-pyrone skeleton. What reaction allows to detect this group of compounds?

- A. Lactone test
- B. Cyanide test
- C. Iron (III) chloride reaction
- D. Wilson's reaction
- E. Trim-Hill reagent

2. Ammifurinum contains furocoumarines. These biologically active substances are derived from:

- A. Fruits of large ammi
- B. Fruits of psoralea
- C. Fruits of common parsnip
- D. Fruits of toothpick ammi
- E. Rhizomes and roots of angelica

3. Preparations made of ginseng roots have tonic and adaptogenic properties, improve mental and physical performance. If the ginseng tincture cannot be found in a pharmacy, it can be substituted by the analogous preparations made of the following raw material:

- A. Radices Eleutherococci
- B. Radices Valerianae
- C. Radices Inulae
- D. Radices Ononidis
- E. Radices Rhei

4. Fruits of holy thistle (Silybum) are used for production of a number of domestic and foreign hepatoprotective drugs. Factor of merit of this raw material is content of:

- A. Flavolignans
- B. Cumarins
- C. Alkaloids
- D. Vitamins
- E. Terpenoids

10. Антрахінони, дубильні речовини

1. Preparations of sorrel roots can have both laxative and astringent effect. Such an effect results from the presence of the following biologically active substances:

- A. Anthracene derivatives and tannins
- B. Flavonoids and essential oils
- C. Essential and fatty oils
- D. Coumarins and phenol glycosides
- E. Iridoids and vitamins

2. Anthracene derivatives of emodin have purgative effect. Large quantities of anthracene-derived groups of emodin are contained in the fruits of the following plant:

- A. Buckthorn
- B. Elder (*Sambucus*)
- C. Blackcurrant
- D. Blueberry (*Vaccinium myrtillus*)
- E. Alder buckthorn (*Frangula alnus*)

3. Tannins can be used as an antidote for alkaloid poisoning. What herbal remedy should be applied in case of such intoxication:

- A. Cinquefoil root
- B. Calamus rhizome
- C. Althaea root
- D. Rhizome and roots of madder
- E. Elecampane root

4. Tannins have astringent effect and are used for treatment of colitis, enterocolitis, diarrhea. What herbal raw material contains a lot of tannins?

- A. Fructus Myrtilli
- B. Fructus Sambucci nigri
- C. Fructus Ribes nigri
- D. Fructus Rhamni catharticae
- E. Fructus Frangulae

5. Tanning agents of silverweed roots and rhizomes are used as an astringent. What species of silverweed is pharmacopoeial?

- A. *Potentilla erecta*
- B. *Potentilla argentea*
- C. *Potentilla pilosa*
- D. *Potentilla impolita*
- E. *Potentilla anserina*

6. A phytochemical department of a pharmaceutical factory produces biogenic stimulators out of different raw materials. Specify the plant-derived biogenic stimulators:

- A. Liquid extract of aloe, aloe liniment, aloe juice, biosedum
- B. Liquid extract of aloe, peloidinum, biosedum juice
- C. Peloidinum, humisolum, torfotum, Fibs pro injectionibus
- D. Vitreous body, Suspesio Placetae pro injectionibus, aloe juice, biosedum

E. Peloidinum, humisolum, torfotum, plasmol, solcoseryl

7. Buckthorn bark and its derivative drugs are used as laxatives in medicine. According to the State Pharmacopoeia of Ukraine during chromatographic identification of buckthorn bark it is necessary to detect:

A. Glucofrangulin

B. Panaxosides

C. Purpurea glycosides

D. Ginkgosides

E. Lanatosides

8. Several species of Polygonum genus are used in medicine. One of these species has rootstocks rich in tanning agents, which are used to treat diarrhea. Name this species:

A. Polygonum bistorta

B. Polygonum hydropiper

C. Polygonum persicaria

D. Polygonum alpinum

E. Polygonum aviculare

9. Senna (cassia) foliage contains anthracene derivatives. Their presence can be confirmed by qualitative reaction with:

A. Alkali

B. Iron ammonium alum

C. Iron (II) sulfate

D. Febling's reagent

E. Molish's reagent

10. Specialists of a pharmaceutical enterprise confirm the identity of Cassia acutifolia herbal raw material. During reaction with alkali it developed cherry-red coloring. What substances were identified?

A. Anthraquinones

B. Alkaloids

C. Tannins

D. Iridoids

E. Glycosides

11. Флавоноїди

1. A patient with heart failure induced by long-term coronary vessel disorder can be administered a drug produced out of the following raw herbal material:

- A. Hawthorn berries
- B. Calendula flowers
- C. Ginseng roots
- D. Aralia roots
- E. Berberis roots

2. The main active components of hawthorn berries are flavonoids. What is their pharmacological effect?

- A. Hypotensive and sedative
- B. Laxative and sedative
- C. Tonic and antispasmodic
- D. Diuretic and styptic
- E. Antispasmodic and antiinflammatory

3. A laboratory received some raw herbal material for analysis. The plant had flowerheads up to 4 cm in diameter, marginal flowers were agamic, blue, funnel-shaped; the inner flowers were bisexual, purple, tubular. What plant has these features?

- A. *Centaurea cyanus*
- B. *Solidago virgaurea*
- C. *Polygonum persicaria*
- D. *Scutellaria baicalensis*
- E. *Viola tricolor*

4. Patients with heart failure caused by persisting cardiac and coronary vessel dysfunction can be recommended preparations produced from the following herbal raw material:

- A. Hawthorn fruits
- B. Calendula flowers
- C. Ginseng roots
- D. Aralia roots
- E. Barberry roots

5. Rutin exhibits P-vitamin activity. What medicinal plant is used as starting materials for the industrial production of rutin?

- A. *Fructus Sophorae japonicae*
- B. *Fructus Hippophaes rhamnoides*
- C. *Flores Helichrysi arenarii*
- D. *Herba Bidentis tripartitae*
- E. *Herba Polygoni avicularis*

6. Under the SPhU (appendix 2), leaves of ginkgo are standardized by the content of:

- A. Flavonoids
- B. Saponins
- C. Alkaloids
- D. Coumarins
- E. Chromones

7. Field horsetail grass is recommend as a diuretic. What herbal material can be used as a substitute?

- A. Herba Aervae lanatae
- B. Herba Leonuri
- C. Herba Menthae piperitae
- D. Herba Convallariae
- E. Herba Adonidis

8. A pharmacy has no quinquelobate motherwort in stock. It can be substituted by the following herbal material:

- A. Rhizomes and roots of valerian
- B. Linden flowers
- C. Beggarticks grass
- D. Raspberry fruits
- E. Hypericum grass

9. A drug raw material from the family Polygonaceae had been sent to a laboratory for analysis. On macroscopic examination the material was identified as a herbaceous plant with lanceolate leaves with a red spot, and filmy ocreae covered with appressed hairs. The plant had the apical inflorescence in dense spicate panicles. What plant is it?

- A. Redshank (persicaria)
- B. Common knotweed
- C. Biting knotweed
- D. Snakeweed
- E. Common buckwheat

10. Some domestic and foreign hepatoprotective activity preparation are made of holy thistle bearing. Purity of this material is determined by the content of:

- A. Flavolignan
- B. Coumarins
- C. Alkaloids
- D. Vitamins
- E. Terpenoids

11. A certain herbal raw material is used to make Flamin cholagogue. Name this material:

- A. Helichrysi arenarii flores
- B. Viola herba
- C. Tanacetii flores
- D. Crataegi flores
- E. Meliloti herba

12. Алкалоїди. Питання з ресурсознавства

1. Specify which of the alkaloids given below will react positively to xanthines (murexide test):

- A. Caffeine
- B. Atropine sulfate
- C. Papaverine hydrochloride
- D. Quinine sulfate
- E. Ephedrine hydrochloride

2. Bellasthesin is a spasmolytic drug used in treatment of gastrointestinal diseases. What substance contained in Atropa Belladonna provides such an effect of the drug?

- A. Hyoscyamine
- B. Morphine
- C. Codeine
- D. Reserpine
- E. Caffeine

3. Bellasthesin is a spasmolytic drug used in treatment of gastrointestinal diseases. What substance contained in Atropa Belladonna provides such an effect of the drug?

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4. Vitali-Morin's reaction is used to identify tropane alkaloids in raw herbal material. Name the alkaloid that can be detected by this specific reaction.

- A. Scopolamine
- B. Codeine
- C. Morphine
- D. Platyphyllin
- E. Papaverine

5. Medications Passit and Novopassit are used as tranquilizing, sedative and mild soporific agents. These medications are produced from the following grass:

- A. Purple passionflower
- B. Three-lobed beggarticks
- C. Garden sage
- D. Elecampane
- E. Lesser periwinkle

6. Intoxication cases were observed during harvesting raw herbal material containing potent and toxic substances. What raw herbal material SHOULD NOT be harvested by underage and pregnant?

- A. Celandine grass
- B. Walnut leaves
- C. Valerian rootstock
- D. Buckthorn bark
- E. Blueberries

7. Choose the substance that is a tropane-derived alkaloid: A. Cocaine B. Caffeine C. Strychnine D. Pilocarpine E. Platyphyllin

8. One of the packagings stored at the warehouse of finished products has a damaged label. It is known that the drug substance in this packaging relates to alkaloids. In course of group qualitative tests for alkaloids the drug substance reacted positively with murexide. Further identification of the drug substance should be limited to the following group of derivatives:

- A. Purine
- B. Quinoline
- C. Tropane
- D. Isoquinoline
- E. Indole

9. What herbal drug produced from alkaloid-containing raw materials can be recommended for neurasthenia, insomnia, menopausal disorders?

- A. Novopassit
- B. Ergotamine
- C. Glaucine hydrochloride
- D. Securinine nitrate
- E. Vinblastine

10. Vincamine alkaloid reduces blood pressure, has a pronounced sedation effect, as well as hemostatic and anti-inflammatory effect. What herb is the source of this alkaloid?

- A. Common periwinkle
- B. Thick-fruited pagoda tree
- C. Bluish larkspur
- D. Northern wolfsbane
- E. Yellow water-lily

11. Alkaloid glaucine has an antitussive effect that is stronger and longer if compared to that of codeine, and exhibits no narcotic side effects. What medicinal plant contains glaucine?

- A. Yellow hornpoppy
- B. Celandine
- C. *Thermopsis lanceolata*
- D. *Datura*
- E. Henbane bell (*Scopolia carniolica*)

12. A certain plant is used for production of tinctures and extracts which are the part of complex drugs Bellataminal, Becarbon, Besalol, etc. Specify the grass that is used for this purpose:

- A. Belladonna
- B. Lily of the valley
- C. Astragalus

- D. Beggarticks
- E. Celandine

13. Representatives of the family Solanaceae are widely used in medical practice as alkaloid-containing plants. Which representative is the source for production of semi-synthetic steroid hormones?

- A. Solanum laciniatum
- B. Atropa belladonna
- C. Datura Stramonium
- D. Hyoscyamus niger
- E. Solanum tuberosum

14. Select a reagent that should be applied by an analytical chemist in order to detect alkaloids in the herbal raw material:

- A. Dragendorff reagent
- B. Bromine water
- C. Alkaline solution
- D. Stahl's reagent
- E. Trim-Hill reagent

15. Most alkaloids are isolated from the biological material by means of polar solvents. Which of the listed alkaloids is isolated by the way of distillation with water vapour?

- A. Coniine
- B. Strychnine
- C. Cocaine
- D. Atropine
- E. Quinine

16. A laboratory received some herbal raw material for analysis. It is a composition of ovoid-pointed leaves up to 25 cm long and 20 cm wide; the leaf base is cuneate, the leaf edge is emarginate, The cutting is long and cylindric. The leaf venation is pinnatisect; the midrib and the first-order veins project significantly on the inferior surface of the leaf. The superior leaf surface is dark green, the inferior surface is light green. The plant has a weak narcotic smell. The taste cannot be determined. The plant is poisonous! The described herbal raw material relates to the following plant:

- A. Datura stramonium
- B. Passiflora incarnata
- C. Chelidonium majus
- D. Vinca minor
- E. –

17. Most alkaloids are isolated from the biological material by polar solvents. Which of the listed alkaloids is isolated by the way of distillation with water vapour?

- A. Coniine
- B. Strychnine
- C. Cocaine

D. Atropine

E. Quinine

18. Analysis of an extract by chromatographic method revealed presence of phenyl prapanolamine. It is the metabolite of the following alkaloid:

A. Ephedrine

B. Pyrocatechin

C. Aconitine

D. Securinin

E. Reserpine

19. Leaves of belladonna, henbane and datura containing tropane alkaloids must be stored according to the following list requirements:

A. B list (these drug substances require caution in handling, storage or use)

B. A list (poisonous drug substances)

C. General sales list

D. Essential oil materials list

E. List of substances equivalent to narcotics

20. Codeine can be derived for medical purposes out of a plant alkaloid by means of semisynthetic method. Name this alkaloid:

A. Morphine

B. Papaverine

C. Berberine

D. Protopine

E. Chelidonine