

**NATIONAL UNIVERSITY OF PHARMACY
FOREIGN LANGUAGES DEPARTMENT**



Нармац

**ENGLISH ITEMS
FOR LICENSING EXAMINATION PREPARING
TO “KROK 1. PHARMACY”**

**Kharkiv
NPhaU
2019**

**MINISTRY OF HEALTH IN UKRAINE
NATIONAL UNIVERSITY OF PHARMACY
FOREIGN LANGUAGES DEPARTMENT**

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“KROK 1. PHARMACY”**

A SELF – ASSESSMENT PRACTICE TEST - BOOK FOR PHARMACY APPLICANTS

**Kharkiv
NPhaU
2019**

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**ENGLISH ITEMS FOR LICENSING EXAMINATION PREPARING TO
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The self – assessment practice test - book includes test items in analytical chemistry, organic chemistry, physical and colloid chemistry, pathological physiology, biochemistry, pharmaceutical botany, microbiology, pharmacology for applicants in preparing to the licensing integrated examination in English “Krok 1”. Pharmacy” and to further use in this learning / teaching.

The self – assessment practice test - book has been developed for pharmacy applicants at the Pharmaceutical University and faculties of Ministry of Health in Ukraine.

The practice test - book is intended for classroom and self - assessment work in study the subject “English in proficiency”. It should be useful for applicants in their aducational acvtivity.

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PREFACE

Organization of the classwork and self - assessment work of the applicants for higher education is the educational process on the subject “The English in proficiency”. The fulfilment and the control of the classwork and the self - assessment work play an important role in the improvement of the teaching process in the University education. The applicants of the University education of full – time and part – time studies require a booklet in the English language for practicing tests to “Krok 1. Pharmacy”. The purpose of the current booklet in the English language for practicing tests to “Krok 1. Pharmacy” for applicants is the fulfilment and the control of the English tasks containing vocabulary in the course of the classwork and self - assessment work to take a qualified examination successfully. The self – study practice test - book includes test items in analytical chemistry, organic chemistry, physical and colloid chemistry, pathological physiology, biochemistry, pharmaceutical botany, microbiology, pharmacology for applicants in preparing and use at the licensing integrated examination in English “Krok 1”. Pharmacy” and further use in learning / teaching the program material.

A booklet of the English tests will allow applicants to consolidate the studied and fulfilled subject material in the course of the classwork and the self - assessment work by the University applicants.

In the course of the fulfilment of the English tests, containing vocabulary of the mentioned specific subjects the applicants will be able to master the following skills :

- freely and accuracy use professionally – oriented vocabulary ;
- work quickly and independently on the tests ;
- be able to carry out a self – control ;
- assess himself by using current estimation grade :

Estimation grade

38 – 40 points – 5 “A” level – excellent

3

35 – 37 points – 4 “B” level – good

- 30 – 34 points – 4 “C” level – good, but try better
- 25 – 29 points - 3 “D” level – satisfactory
- 20 – 24 points - 3 “E” level – passed, but try better
- 0 - 19 points - 2 “FX” level – didn’t pass

The self – study practice test book has been developed for pharmacy applicants at the Pharmaceutical University and faculties of Ministry of Health in Ukraine.

PART 1
ANALYTICAL CHEMISTRY

Practice

1. Choose the correct variant.

1. An is a method of quantitative analysis for determining the concentration of an acid or base.

a) back titration b) acid – base titration c) direct titration d) displacement titration

2. An is a class of balance designed to measure small mass in the sub-milligram range.

a) analytical chemistry b) analytical analysis c) analytical determination d) analytical balance

3. is an electrode of the device connected to the positive pole of battery.

a) anode b) cathode c) electrode d) wire

4. is a nontoxic or minimally toxic gas which reduces or displaces the normal oxygen concentration in breathing air.

a) asphyxiating gas b) propan gas c) methane gas d) carbon monoxide

5. occurs when two reagents are used - one that reacts with the original sample, and second that reacts with the first reagent.

a) acid – base titration b) back titration c) direct titration d) displacement titration

6. is a generally cylindrical container with a flat bottom.

a) bottle b) test – tube c) beaker d) burette

7. is a squeeze bottle with a nozzle. It is used to rinse various pieces of laboratory glasswares.

a) flask b) syringe c) pipette d) bottle

8. is a graduated glass tube with a tap at one end for delivering known volumes of a liquid, especially in titrations.

a) burette b) beaker c) test – tube d) bottle

9. Lead Nitrate and Sodium Potassium Iodine are that form a yellow precipitate for Lead Iodine.

a) gaseous solutions b) solid solutions c) colourless solutions d) liquid solutions

10. is a piece of furniture where pharmaceutical glasswares are dried.

a) table b) dessicator c) scales d) items

11. is a pharmaceutical item for storage of distilled water, solutions.

a) bottle b) flask c) pipette d) beaker

12. is a form of volumetric analysis in which the formation of a coloured complex is used to indicate the end point of a titration.

a) complex formation titration b) direct titration c) back titration d) displacement titration

13. is a strong, red colour, inclining to purple.

a) green colour b) black colour c) yellow colour d) crimson colour

14. is a way to determine the contents of a substance quantitatively.

a) direct titration b) back titration c) complex formation titration d) displacement titration

15. is a second titration for metal ions that do not have a good indicator.

a) direct titration b) complex formation titration c) displacement titration d) back titration

16. Red crystals so – called have the temperature of melting of 316 degrees above zero.

a) fluorescein b) eosine c) current d) column

17. is a piece of laboratory glassware used for the evaporation of solutions.

a) condenser b) glass evaporating dish c) dessicator d) flask

18. are made of glass. They are used to transfer small amounts of liquids.

a) burettes b) beakers c) pipettes d) glasses

19. is a glassware device used for distillation or dry distillation of substances.

a) glass pipette b) glass retort c) glass rod d) glass test – tube

20. is a piece of laboratory equipment used to mix chemicals and liquids for laboratory purposes.
- a) glass rod b) glass retort c) glass pipette d) glass bottle
21. is a piece of laboratory equipment used to measure the volume of a liquid.
- a) straight circular cylinder b) oblique cylinder c) inclined cylinder d) graduated cylinder
22. is cylindrical container with wide opening that may be sealed.
- a) bottle b) pitcher c) jar d) cup
23. is an hydrogen sulfide (H_2S) gas. It is a natural product of decay.
- a) odour of vinegar b) odour of rotten eggs c) odour of rotten apples d) odour of rotten pears
24. is a type of titration based on a dox reaction between the analyte and titrant.
- a) back titration b) displacement titration c) acid- base titration d) oxidation – reductions titration
25. is any product of the condensation of atmospheric water vapor that falls under gravity.
- a) oxidation b) precipitation c) evaporation d) nuclearization
26. is a branch of chemistry that deals with the identification of elements or grouping of elements present in a sample.
- a) qualitative analysis b) quantitative analysis c) result of analysis d) selective analysis
27. is a branch of chemistry that deals with the determination of the amount or percentage of one or more constituents of a sample.
- a) qualitative analysis b) quantitative analysis c) result of analysis d) selective analysis
28. is a general test for the detection of halogens, nitrogen and sulphur in an organic compound.

- a) reaction of unification b) reaction of identification c) reaction of separation
d) reaction of detection

29. Chemists often use nitrogen gas to create an inert atmosphere for a chemical reaction in a reaction vessel. It is

- a) reaction of identification b) reaction of detection c) reaction of separation d)
reaction of unification

30. is a method that converts a mixture or solution of chemical substances into two or more distinct product mixtures.

- a) reaction of identification b) reaction of detection c) reaction of separation d)
reaction of unification

31. is a substance or compound added to a system to cause a chemical reaction.

- a) solution b) reagent c) liquid d) matter

32. may involve dissolution, extraction, reaction with some chemical species.

- a) sample preparation b) glasswares preparation c) furniture preparation d)
design preparation

33. is the process in which a representative piece of material is extracted from a larger amount and readied for analysis.

- a) sample b) sampling c) object d) thing

34. is an aqueous product in which no precipitate has formed.

- a) suspension b) insoluble precipitate c) soluble precipitate d) supernate

35. is the separation of iron from $Al_2(SO_4)_3$ in aqueous solutions.

- a) solution of iron alum b) solid solution c) gaseous solution d) liquid solution

36. is a piece of laboratory glassware consisting of a finger-like length of glass or clear plastic.

- a) beaker b) test – tube c) bottle d) jar

37. is a graph of the pH as a function of the amount of titrant (acid or base) added.

- a) back titration b) displacement titration c) titration curve d) acid – base titration

38.is a way of expressing concentration.

- a) determination b) measurement c) weighing d) titer

39. When excess calcium hydroxide is added to limewater, a suspension of calcium hydroxide particles arise, giving it a milky aspect. It is

- a) turbidity of lime water b) turbidimetry c) titration d) measurement

ORGANIC CHEMISTRY

Practice

1. Choose the correct variant.

1. is a colourless liquid organic compound with the chemical formula CH_3COOH .

- a) sulphuric acid b) acetic acid c) oxalic acid d) uric acid

2. is the organic compound with the formula $(\text{CH}_3)_2\text{CO}$.

- a) acetone b) acetyl c) acetylene d) alcohol

3.are non-aromatic compounds.

- a) aldehyde b) acrylonitrile c) acidic d) aliphatic hydrocarbon

4. is the amino acid that has a single hydrogen atom as its side chain.

- a) anion b) aniline c) glycerol d) aromatic

5. substance doesn't contain water.

- a) anhydride b) anhydrous c) asymmetric d) butyl

6. is a organic compounds bearing the functional group $\text{R}-\text{N}=\text{N}-\text{R}'$.

- a) benzene b) camphor c) carbohydrate d) azo dye

7. is a molecule that features two joined rings.

- a) bicyclic molecule b) monatomic molecule c) macromolecular molecule d) neutral molecule

8..... is the association of a pair of homologous chromosomes physically held together by at least one DNA crossover.

- a) bonding b) carbonic c) bivalent d) cation

9. is a lasting attraction between atoms, ions or molecules that enables the formation of chemical compounds.

- a) bond b) chlorination c) coal d) configuration
10. is a colourless liquid with a "sweet" smell that can be detected at low levels.
a) amine b) carbon tetrachloride c) benzoic acid d) azo dye
11. is an organic compound that contains a carboxyl group (C(=O)OH).
a) uric acid b) sulphuric acid c) acetic acid d) carboxylic acid
12. is the lightweight black carbon and ash residue hydrocarbon produced by removing water and other volatile constituents from animal and vegetation substances.
a) coal b) dust c) charcoal d) sawdust
13. is an acid compound found in citrus fruits.
a) citric acid b) sulphuric acid c) acetic acid d) oxalic acid
14. is the change of the physical state of matter from gas phase into liquid phase.
a) cellulose b) carbonic c) anthracene d) condensation
15. is a system of connected p orbitals with delocalized electrons in a molecule, which in general lowers the overall energy of the molecule and increases stability.
a) contraction b) conjugation c) cycle d) cyanide
- 16..... is a chemical bond that involves the sharing of electron pairs between atoms.
a) covalent bond b) dimethyl c) diethyl d) cyanate
17. is a chemical compound with the chemical formula HCN.
a) uric acid b) sulphuric acid c) cyanic acid d) decarboxilation
18. are molecules composed of only two atoms.
a) neutral b) diatomic c) micro d) monatomic
19. is an acid containing two potential protons to donate.
a) dibasic acid b) uric acid c) acetic acid d) oxalic acid
20. is an cation with valence of 2.
a) bivalent b) ethane c) divalent d) ether
21. is a chemical bond between two chemical elements involving four bonding electrons instead of the usual two.
a) double bond b) bond c) bonding d) bondage

- 22..... is a chemical compound, a simple alcohol with the chemical formula C_2H_5OH .
- a) ether b) ethanol c) ethylene d) formate
23. is the simplest carboxylic acid.
- a) uric acid b) oxalic acid c) formic acid d) acetic acid
24. is a tube or pipe that is wide at the top and narrow at the bottom, used for guiding liquid or powder into a small opening.
- a) wire b) pole c) rubber d) funnel
25. is a simple polyol compound.
- a) glucose b) glycerol c) glycol d) ion
26. are chemical species that donate an electron pair to an electrophile to form a chemical bond in relation to a reaction.
- a) nucleophilic b) phenol c) polyamide d) propane
27. is an organic compound with the formula $C_2H_2O_4$.
- a) sulphuric acid b) oxalic acid c) acetic acid d) formic acid
28. is a heterocyclic aromatic organic compound with the chemical formula C_9H_7N .
- a) quinoline b) saccharide c) scheme d) salicyl
29. is a chemical bond between two atoms involving two valence electrons.
- a) double bond b) bond c) single bond d) methane
30. is a polymeric carbohydrate consisting of a large number of glucose units joined by glycosidic bonds.
- a) lactose b) gele c) fertilizer d) starch

PHYSICAL AND COLLOID CHEMISTRY

Practice

1. Choose the correct variant.

1. has to do with the uses of aggravated conditions of heat, humidity, oxygen, sunlight, vibration which speed up the normal aging processes of items.

a) accelerated ageing b) activation energy c) boiling temperature d)

conjugation

2. is a general process in which molecules separate or split into smaller particles such as atoms, ions or radicals, usually in a reversible manner.

a) association b) dissociation c) splitting d) combination

3. replicates the work of the real kidney.

a) artificial stomach b) artificial liver c) artificial rectum d) artificial kidney

4. of an object is the total displacement during some extended period of time, divided by that period of time.

a) average placement b) average movement c) average displacement d) average constituent

5. is a four carbon acid, $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$, with an unpleasant odor.

a) butiric acid b) oxalic acid c) sulphuric acid d) acetic acid

6. is defined as the concentration of surfactants above which micelles form and all additional surfactants added to the system.

a) charge b) chain c) critical concentration of micelle – forming d) coalescence

7. is distributed in the form of small particles (crystals, threads, films or platelets, droplets, or bubbles) in the other, continuous phase, the dispersion medium.

a) colloidal dispersion b) coarse – disperse system c) condition d) equation

8. is the process by which organic substances are broken down into simpler organic matter.

a) composition b) structure c) combination d) decomposition

9. water can make a liquid thinner or weaker.

a) mixed b) diluted c) transferred d) drop

10. is a structure that appears on the surface of an object when it is exposed to a fluid.

a) single electrical layer b) third electrical layer c) double electrical layer d) fourth electrical layer

11. is the electrical intensity or "pressure" developed by a source of electrical energy such as a battery or generator.
- a) electrical current b) electromotive force c) electrical cable d) electrical power
12. is soluble in both of fat and water and enables fat to be uniformly dispersed in water as an emulsion.
- a) emulsifying agent b) equilibrium c) endothermal d) exchange
13. is a type of vaporization that occurs on the surface of a liquid as it changes into the gas phase when it reaches its boiling point.
- a) dimension b) emulsion c) evaporation d) decomposition
14. is the ease at which the material can be fused together or to the temperature or amount of heat required to melt a material.
- a) fusibility b) mobility c) stationary d) movement
15. is a method of rapid elimination of cholesterol from the plasma.
- a) absorption b) adsorption c) hemosorption d) option
16. is the time required for the reactant concentration to decrease to one-half its initial value.
- a) double period b) first period c) full time d) half – life period
17. is a redox electrode which forms the basis of the thermodynamic scale of oxidation-reductions potentials.
- a) hydrogen gas electrode b) electrode c) cathode d) anode
18. is if each of the variables is directly proportional to the multiplicative inverse (reciprocal) of the other, or equivalently if their product is a constant.
- a) hyperbolic coordinates b) direct proportional c) inversely proportional
d) properties
19. is the pH at which a particular molecule carries no net electrical charge or is electrically neutral in the statistical mean.
- a) isoelectric point b) point of view c) sharp point d) blunt point
20. is a tool used to determine the mole fraction (x_i) or the mass fraction (w_i) of each phase of a binary equilibrium phase diagram.

a) leverage b) lever rule c) restriction d) measurement

21. is when light bounces off an object.

a) lightning b) light c) light scattering d) light reflection

22. is a general physical process where light is forced to deviate from a straight trajectory by one or more paths due to localized non-uniformities in the medium through which they pass.

a) light b) light scattering c) light reflection d) dark

23. refers to how effectively electrons can get close to the nucleus.

a) penetration b) pathway c) participation d) elimination

24. is the creation of a solid substance from a solution.

a) pressure b) protection c) precipitate d) rate

25. is a chemical reaction in which the oxidation states of atoms are changed.

a) second b) redox c) singular d) solute

26. is an electrode which has a stable and well-known electrode potential.

a) reference electrode b) reference cathode c) reference anode d) reference

27. is a substance which lowers the surface tension of the medium in which it is dissolved.

a) sedimentation b) selectivity c) surface active substance d)

electrode

28. is a reference electrode based on the reaction between elemental mercury and mercury(I) chloride.

a) saturation b) cathode c) anode d) saturated calomel electrode

29. is a naturally occurring material that is broken down by processes of weathering and erosion.

a) development b) sediment c) solution d) maceration

30. is a type of biological or synthetic, polymeric membrane that will allow certain molecules or ions to pass through it by diffusion.

a) permeable membrane b) membrane c) semipermeable membrane d) permeability

31. is a substance that dissolves a solute resulting in a solution.
 a) solution b) solubility c) to dissolve d) solvent
32. Particles of the same substance that
 a) stick together b) hold together c) stay together d) be together
33. is the elastic tendency of a fluid surface which makes it acquire the least surface area possible.
 a) surface activity b) surface layer c) surface tension d) synergy
34. is the measure of its resistance to gradual deformation by shear stress or tensile stress.
 a) transition b) wavelength c) limit d) viscosity
35. interaction is an all-inclusive term to describe various progressive interactions between clay minerals and water.
 a) acid – water b) hydrogen c) water – clay d) electricity

PATHOLOGICAL PHYSIOLOGY

Practice

1. Choose the correct variant.

1. is a collection of health effects that are present within 24 hours of exposure to high doses of ionizing radiation.
 a) radiation b) acute radiation sickness c) X – ray d) sickness
2. are endocrine glands that produce a variety of hormones including adrenaline and the steroids - aldosterone and cortisol.
 a) adrenal glands b) thyroid glands c) genes d) membranes
3. is a mass of cells that lack the ability to invade neighboring tissue or metastasize.
 a) cancer b) decomposition c) benign tumor d) swelling
4. is the process by which blood changes from a liquid to a gel, forming a blood clot.

a) blood contamination b) blood poisoning c) blood change d) blood coagulation

5. is the maximum quantity of oxygen that will combine chemically with the hemoglobin in a unit volume of blood.

a) blood oxygen capacity b) hydrogen c) oxygen d) hemoglobin

6. is a resilient and smooth elastic tissue, a rubber-like padding that covers and protects the ends of long bones at the joints.

a) catarrhal b) burn c) bleeding d) cartilage

7. occurs when the blood supply to part of your brain is interrupted or reduced.

a) arterial hyperemia b) atrophy c) cerebral stroke d) cyanosis

8. is the process by which blood changes from a liquid to a gel, forming a blood clot.

a) clotting b) cortex layer c) brain d) forehead

9. is a therapy technique used in physical therapy, where blockage of blood in an area of the body is deliberately made.

a) cerebral stroke b) compression ischemia c) consciousness d) decompression

10. is a condition characterized by large amounts of dilute urine and increased thirst.

a) diabetes mellitus b) delayed type c) diabetes insipidus d) embolus

11. is a group of metabolic disorders in which there are high blood sugar levels over a prolonged period.

a) examination b) diabetes mellitus c) eyelid d) fever

12. is the feeling that one cannot breathe well enough.

a) gastric juice b) edema c) tumor d) dyspnea

13. is the rate at which red blood cells sediment occurs in a period of one hour.

a) erythrocyte sedimentation rate b) precipitate c) white cells d) red cells

14. is an abnormal enlargement of your thyroid gland.

a) breath b) ischemia c) goiter d) larynx

15. is a kind of skin rash with red, raised, itchy bumps.
 a) rash b) hives c) redness d) ivy
16. is a sleep disorder where people have trouble sleeping.
 a) insomnia b) sleep c) slumber d) sleepless
17. is heart's main pumping chamber.
 a) larynx b) heart c) left ventricular d) chamber
18. is an ovoid or kidney-shaped organ of the lymphatic system.
 a) lung b) neck c) chin d) lymph node
19. are cancerous tumors that can potentially result in death.
 a) malignant tumors b) tumors c) cancers d) suffocations
20. is a pale colour of the skin that can be caused by illness, emotional shock or stress, stimulant use, or anemia.
 a) poisoning b) pallor c) purine d) redness
21. is the measure of the ability of a material to support the formation of a magnetic field within itself.
 a) leukemic failure b) irritation c) permeability d) disorder
22.are components of blood whose functions are to react to bleeding from blood vessel injury by clumping, thereby initiating a blood clot.
 a) illnesses b) platelets c) organs d) blood vessels
23. is fluid accumulation in the tissue and air spaces of the lungs.
 a) purine basis b) nephron c) tongue d) pulmonary edema
24. is an acute form of exudative inflammation in which the enzymes produced by white blood cells cause liquefaction of the affected tissues, resulting in the formation of pus.
 a) inflammation b) heart attack c) purulent inflammation d) pus
25. is an exudate, typically white-yellow, yellow, or yellow-brown, formed at the site of inflammation during bacterial or fungal infection.
 a) pus b) edema c) inflammation d) pain shock
26. is an area of swelling of the lower layer of skin and tissue just under the skin.

a) Quincke's edema b) platelet c) tumor d) decomposition

27. is an abnormal redness or flushing of the skin.

a) ulcer b) vein c) redness d) stasis

28. results from the biological process of wound repair in the skin, as well as in other organs and tissues of the body.

a) wound b) smell c) serum d) scar

29. is a reaction to proteins in antiserum derived from a non-human animal source, occurring 5–10 days after exposure.

a) seasickness b) airsickness c) serum sickness d) dyspnea

30. is a severe deficiency in caloric energy intake, below the level needed to maintain an organism's life.

a) starvation b) reduction c) serum d) biology

31. is a condition of severely deficient supply of oxygen to the body that arises from abnormal breathing.

a) hanging b) falling c) suffocation d) jumping

32. is a transient abnormal enlargement of a body part or area not caused by proliferation of cells.

a) inflammation b) rash c) cerebral stroke d) swelling

33. is an autoimmune disease in which the body's immune system mistakenly attacks healthy tissue in many parts of the body.

a) systemic lupus erythematosus b) hives c) rash d) redness

34. is a tough band of fibrous connective tissue that usually connects muscle to bone and is capable of withstanding tension.

a) ankle b) toe c) tendon d) cartilage

35. is an endocrine gland in the neck, consisting of two lobes connected by an isthmus.

a) lymph node b) ear c) eyebrow d) thyroid gland

BIOCHEMISTRY

Practice

- 1..... is an anatomical term for loose connective tissue composed of adipocytes.
a) adipose tissue b) absorption c) adsorption d) evaporation
2. is a homodimeric protein enzyme of 86 kilodaltons.
a) alkaline battery b) alkaline c) biliary obstruction d) alkaline phosphatase
3. are steroid acids found predominantly in the bile of mammals and other vertebrates.
a) sulphuric acids b) bile acids c) uric acids d) acetic acids
4.blocks the bile ducts, which carry bile to the small intestine for digestion and waste removal.
a) chylomicron b) citric acid c) biliary obstruction d) tricarboxylic acid cycle
5. is interruption of a chemical pathway owing to one chemical substance inhibiting the effect of another by competing with it for binding or bonding.
a) competitive inhibition b) exudation c) decomposition d) composition
6. may also be caused by infections, trauma to the eye, chemical burns, immune system diseases and certain other eye conditions, such as uveitis, glaucoma.
a) determination b) diarrhea c) cornea vascularisation d) disorder
7. are a sudden, involuntary muscle contraction or over-shortening ; while is generally temporary and non-damaging.
a) consumption b) cramps c) diabetes insipidus d) derivative
8.is the breakdown of large insoluble food molecules into small water-soluble food molecules.
a) digestion b) ethanol c) fermentation d) cycle
9. is an abnormal accumulation of fluid in the interstitium, located beneath the skin and in the cavities of the body.
a) decrease b) increase c) order d) edema

10. is a hormone, neurotransmitter, and medication.

- a) methane b) epinephrine c) morphine d) injection

11. is a redox coenzyme, more specifically a prosthetic group of a protein, involved in several important enzymatic reactions in metabolism.

- a) festering wound b) free radicals c) flavin adenine dinucleotide d) gall – bladder

12. is a metabolic process that produces chemical changes in organic substrates through the action of enzymes.

- a) wound b) pus c) decomposition d) fermentation

13. When a cut gets infected, it starts to and smell bad.

- a) rotten b) fester c) blow up d) change

14. is a small hollow organ where bile is stored and concentrated before it is released into the small intestine.

- a) liver b) gall – bladder c) stomach d) intestine

15. is a stone formed within the gall - bladder out of bile components.

- a) gall – stone b) gall – bladder c) liver d) stomach

16. is a swelling in the neck resulting from an enlarged thyroid gland.

- a) neck b) chin c) goiter d) ear

17. is a form of inflammatory arthritis characterized by recurrent attacks of a red, tender, hot, and swollen joint.

- a) rash b) gout c) hives d) itch

18. is caused by inadequate plaque removal. Plaque contains germs which attack the healthy tissue around the teeth.

- a) gum bleeding b) bleeding c) teeth d) lips

19. is a yellowish or greenish pigmentation of the skin and whites of the eyes due to high bilirubin levels.

- a) gout b) hives c) lactose d) jaundice

20. is one of the five major groups of lipoprotein which transport all fat molecules around the body in the extracellular water.

a) lipid peroxidation b) low – density lipoproteins c) inhibition d) maple syrup disease

21. is the process in which free radicals "steal" electrons from the lipids in cell membranes, resulting in a cell damage.

a) noncompetitive inhibition b) epinephrine c) lipid peroxidation d) high energy compound

22. is an autosomal recessive metabolic disorder affecting branched-chain amino acids.

a) maple syrup disease b) illness c) elimination d) evaporation

23. is a condition making it difficult or impossible to see in relatively low light.

a) night blindness b) blindness c) visibility d) sore eyes

24. is the process of converting pyruvate to acetyl-CoA.

a) oxidation b) decarboxylation c) determination d) oxidation
decarboxylation of pyruvate

25. is an organic compound with the formula $H_2NC_6H_4CO_2H$.

a) acetic acid b) para – aminobenzoic acid c) oxalic acid d) uric acid

26. is a condition that results in weak or soft bones in children.

a) rickets b) limping c) dislocation d) fracture

27. is an effect based on the electrolyte-non electrolyte interaction, in which the non-electrolyte could be less soluble at high salt concentrations.

a) whitening b) spitting c) salting - out d) vomiting

28. is a disease resulting from a lack of vitamin C (ascorbic acid).

a) quinsy b) scurvy c) scarlet fever d) fever

29. is a group of disorders that affects hemoglobin, the molecule in red blood cells that delivers oxygen to cells throughout the body.

a) leukemia b) anemia c) brain d) sickle – cell anemia

30. is a severe deficiency in caloric energy intake, below the level needed to maintain an organism's life.

a) overfeeding b) eating c) starvation d) lunch

31. is a disaccharide (glucose + fructose) with the molecular formula $C_{12}H_{22}O_{11}$.
- a) saccharide b) sucrose c) lactose d) glucose
32. has the three dimensional shapes of a protein.
- a) body structure b) structural pattern c) tertiary structure d) structure
33. is the craving for fluids, resulting in the basic instinct of animals to drink.
- a) hunger b) tiredness c) rickets d) thirsty
34. is an endocrine gland in the neck, consisting of two lobes connected by an isthmus.
- a) thyroid gland b) goiter c) double chin d) chin
35. is a thiamine (vitamin B_1) derivative which is produced by the enzyme thiamine diphosphokinase.
- a) thiamine derivative b) sucrose c) thiamine pyrophosphate d) lactose
36. is a mitochondrial inner membrane protein that is a regulated proton channel or transporter.
- a) membrane b) protein c) thyroid gland d) uncoupler
37. is an organic compound with chemical formula $CO(NH_2)_2$.
- a) urea b) uric acid c) urine d) acetic acid
38. is a liquid by-product of metabolism in humans and in many animals.
- a) uric acid b) urea c) urine d) sulphuric acid
39. is a type of injury which happens relatively quickly in which skin is torn, cut, or punctured (an open wound).
- a) cut b) wound c) ill d) sick

PHARMACEUTICAL BOTANY

Practice

1. Choose the correct variant.

1. is a cell that displays antigen complexes with major histocompatibility complexes (MHCs) on their surfaces.

- a) accessory cell b) dead cell c) alive cell d) cell
2. is a fruit in which some of the flesh is derived not from the ovary but from some adjacent tissue exterior to the carpel.
- a) vegetable b) food c) aggregate –accessory fruit d) dairy product
3.are the most diverse group of land plants.
- a) anisocytic b) annual plants c) apical meristem d) angiosperms
4.is a plant collected from the phloem or bast surrounding the stem of certain dicotyledonous plants.
- a) fiber b) bast fiber c) cartilage d) flower
5. is a flowering plant that takes two years to complete its biological lifecycle.
- a) annual plant b) flowering plant c) addition root d) biennial plant
6. is a zygomorphic, sympetalous corolla with the limb divided into two lips.
- a) bilabiate corolla b) collateral bundle c) collenchyma d) companion cell
7. is a fruit with a large "stone" inside.
- a) bundle b) root c) stone – fruit d) stem
8. is a colony containing a fixed number of cells, with little or no specialization.
- a) cincinnus b) coenobium c) bundle d) plant
9. are a division of vascular land plants containing a single extant class.
- a) cutinization b) cystoliths c) buds d) conifers
10.is a rounded underground storage organ consisting of a swollen stem base covered with scale leaves.
- a) corymb b) corm c) conifer d) branch
11. is a botanical term for an inflorescence with the flowers growing in such a fashion that the outermost are born on longer pedicels.
- a) corymb b) corm c) bulb d) root
12. winds along the surface of the soil by issuing many vertical branches.
- a) exoderm b) endoderm c) embryo root d) creeping stem

13. forms as a result of an equal division of a terminal bud into two equal branches.

a) dichotomous branch b) dicotyledon c) didynamous d) druse

14. are one of the two groups into which all the flowering plants or angiosperms were formerly divided.

a) druses b) didynamous c) dicotyledons d) dichotomous branchings

15. has four stamens disposed in pairs of unequal length.

a) druse b) didynamous c) dicotyledon d) fibril

16. has the form of a funnel or cone.

a) funnellform b) rhizome c) bulb d) branch

17. are internal buds found in sponges and are involved in asexual reproduction.

a) glossy black berries b) glycogen c) gemmules d) funnellforms

18. are a group of seed-producing plants.

a) halophytes b) hesperidiums c) internodes d) gymnosperms

19. is a group or cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches.

a) bud b) inflorescence c) stem d) branch

20. are the completely undifferentiated meristems in a plant.

a) intercalary meristems b) inulins c) cynarodiums d) lateral meristems

21. extend horizontally from the primary root (radicle) and serve to anchor the plant securely into the soil.

a) legumes b) lateral roots c) mesoderms d) ovoids

22. is a plant in the family Fabaceae (or Leguminosae), either the fruit or a seed of such a plant.

a) pedicle b) legume c) ocrea d) phloem

23. is a thin outgrowth at the junction of leaf and leafstalk of many grasses.

- a) halophyte b) chlorenchyma c) paracytic d) ligulate
24. It is so – called when the stamens of a flower are united as a tube around the style of the carpel.
- a) monocotyledon b) monoadelphous c) multilayer palisade d) microfilaments
25. have four distinct structural features: leaves, stems, roots and flowers.
- a) monoadelphous b) perigonium c) monocotyledons d) cynarodium
26. is a plant structure formed of stipules fused into a sheath surrounding the stem.
- a) ocrea b) ovoid c) palmatipartite d) pedicle
27. has the same shape as an egg, or a similar shape.
- a) xylem b) thyrsus c) stamen d) ovoid
28. has lobes with incisions that extend over half-way toward the petiole.
- a) palmatipartite b) receptacle c) root cap d) fibrilla
29. has a superior and inferior notch that forms an intervertebral foramen with a pedicle on an adjacent vertebra.
- a) sieve tube b) spadix c) pedicle d) silique
30. is a plant that lives more than two years.
- a) sliming b) perennial plant c) plasmodesma d) raceme
31. is the sterile parts of a flower.
- a) perigonium b) vine c) meristem d) radial bundle
32. are all the veins are present in the form of a net work.
- a) tendrils b) stems c) buds d) pinnate – reticulates
33. is the female reproductive part of a flower.
- a) .tubular b) pistil c) wound meristem d) rhizome
34. are a very heterogeneous group of extinct plants with mostly fern-like foliage but with real seeds.
- a) pteridosperms b) plasmodesmas c) endoderms d) angiosperms
35. is an unbranched, indeterminate type of inflorescence bearing pedicellate flowers along its axis.

- a) rhizome b) bulb c) raceme d) fern
36. is the first part of a seedling (a growing plant embryo) to emerge from the seed during the process of germination.
- a) inulin b) radicle c) cynarodium d) black berry
37. is an organ or structure which receives a secretion, eggs, sperm.
- a) receptacle b) tracheid c) tendril d) fern
38. is the only stem of the plant.
- a) addition root b) anisocytic c) bast fiber d) rhizome of fern
39. are elongated living cells (sieve-tube elements) of the phloem, the nuclei of which have fragmented and disappeared and the transverse end walls of which are pierced by sievelike groups of pores.
- a) biennial plants b) sieve tubes c) annual plants d) plants
40. is a type of fruit (seed capsule) having two fused carpels with the length being more than three times the width.
- a) silique b) spadix c) legume d) mesoderm
41. is a type of spike inflorescence having small flowers borne on a fleshy stem.
- a) stem b) paracytic c) spadix d) glycogen
42. is the pollen-producing reproductive organ of a flower.
- a) corymb b) creeping stem c) cystolith d) stamen
43. is a specialized stem, leaves or petiole with a threadlike shape.
- a) tendril b) pedicle c) ocrea d) gemmule

MICROBIOLOGY

Practice

1. Choose the correct variant.

1. include many types of cancer, particularly those of the bone marrow and blood cells (leukemia, lymphoma, multiple myeloma), and certain chronic infections.
- a) acquired immunodeficiencies b) illnesses c) diseases d) disorder

2. is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as *Bacillus anthracis*.

- a) hives b) ulcer c) anthrax d) pollution

3. is a medication made up of antibodies against the tetanus.

- a) artificial active immunity b) antitetanus immunoglobulin c) anti – viral drug d) autoclaving

4. causes gastroenteritis, an inflammation of the gastrointestinal tract involving both of the stomach and the small intestine.

- a) allergen b) antibiotic c) acute intestinal infection d) amoebic dysentery

5. is a laboratory method to check for certain antibodies or antigens in a variety of body fluids including saliva, urine, cerebrospinal fluid, or blood.

- a) blood tellurium agar b) bactericidal c) anaerobic wound infection d) agglutination test

6. is a disorder of sight due to the eye and brain not working well together.

- a) ambliopia b) coli – index c) capsular bacteria d) bismuth sulfite agar

7. inhibits the synthesis of mycolic acid, resulting in disruption of the bacterial cell walls.

- a) penicillin b) antitetanus immunoglobulin c) anti – TB action d) blue - green pigment

8. are germs. They are different in size and shape.

- a) illnesses b) bacteria and fungi c) disorders d) contamination

9. is a type of asexual reproduction in which a new organism develops from an outgrowth or bud due to cell division at one particular site.

- a) budding reproduction b) colienteritis c) capsular bacteria d) amoebic dysentery

10. is an infection caused by the bacterium *Corynebacterium diphtheriae*.

- a) autoclaving b) allergen c) immunity d) causative agent of diphtheria

11. refers to the contamination of our environment and or food source with microscopic organisms, like viruses, bacteria, fungi, and parasites.

- a) drying b) degree of biological contamination c) disinfection of air d) elective medium

12. indicates, utilizes hot air that is either free from water vapor, or has very little of it, and where this moisture plays a minimal or no role in the process of sterilization.

- a) dry heat b) enrichment medium c) evaluation of the general d) infection

13. based on a physical exam, medical and immunization history, and the signs and symptoms of muscle spasms, stiffness and pain.

- a) temperature b) diagnosis of fever c) diagnosis of tetanus d) diagnosis of infection

14. is used for the estimation of coliform bacteria in water samples using the membrane filtration technique.

- a) flowing stream b) stream c) flagellum d) endo broth

15..... indicates that the water has been contaminated with the fecal material of humans or other animals.

- a) faecal contamination of water b) bacteria and fungi c) pollution d) contamination

16. is a lash-like appendage that protrudes from the cell body of certain bacterial and eukaryotic cells and whose primary function is locomotion.

- a) mechanism of infection b) flagellum c) streptobacilli d) microbial number

17. have square ends and are arranged in long chains.

- a) gram – positive streptobacilli b) gram – negative microorganisms c) gram – positive rods with chopped ends d) general pollution of water

18. is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV).

a) hemolytic streptococci b) infectious mononucleosis c) isolation of pure cultures
d) HIV infection

19. contains antibodies.

a) immune serum b) immunology c) liquid preparation d) syrup

20. was based on spores from the Sterne strain of *B. anthracis*.

a) live attenuated vaccine b) serial dilution c) live vaccine STI d) antibiotics

21. is a complex process ultimately dependent on tumor cells.

a) membrane filter method b) tumor growth c) drugs d) live attenuated vaccine

22. is defined as the lowest concentration of an anti- microbial that will inhibit the visible growth of a microorganism after overnight incubation.

a) microorganisms resistance b) identification of a selective culture
c) *Pseudomonas*
d) minimum inhibitory concentration of the antibiotic

23. recognizes the presence of microorganisms in general and specific pathogenic microorganisms.

a) microbiological purity b) non – sewn filaments of a micelle
c) penetration into tissue d) precipitate reaction in gel

24. cannot reproduce outside their host cell, meaning that the parasite's reproduction is entirely reliant on intracellular resources.

a) picornaviruses b) assessment c) obligatory intracellular parasitism d) organisms

25. has antibodies for protection against respiratory infection with *Francisella tularensis*.

a) injection b) prophylactic and therapeutic serum
c) liquid preparation
d) syrup

26. depends on antibiotics which must be active against the offending pathogen(s) and must reach sufficient concentrations at the site of infection where microorganisms have induced severe inflammation.
- a) disease b) vaccine c) penetration into tissue d) toxigenicity
27. is a method widely used in molecular biology to make many copies of a specific DNA segment.
- a) polymerase chain reaction b) quick reaction c) secondary immune response
d) specific hereditary immunity
28. are types of bacteria used to detect and estimate the level of faecal contamination of water.
- a) trichomoniasis b) ulcers c) sanitary – indicative microorganisms
d) Seitz filters
29. is a member of the phylum **Spirochaetes** which contains distinctive diderm (double-membrane) **bacteria**.
- a) **Treponema pallidum** b) **yeast fungi** c) **restoration of normal microflora**
d) **spirochaete bacterium**
30. is a member of the coagulase-negative staphylococci (CoNS).
- a) *S. haemolyticus* b) endo broth c) dry heat d) drying
31. is an infection in any part of urinary system.
- a) infection b) urinary tract infection c) treatment of infection d) contamination
32. is a discontinuity or break in a bodily membrane that impedes the organ to continue its normal functions.

a) liver cirrhosis b) leukemia c) ulcer d) tumor

33. are eukaryotic, single-celled microorganisms classified as members of the **fungus** kingdom.

a) **difteria of the throat** b) **viruses** c) **disinfection of air** d) **yeast fungi**

PHARMACOLOGY

Practice

1. Choose the correct variant.

1. The diagnosis of the should be made by measuring quantitative PBG before starting specific treatment for porphyria.

a) acute attack b) alopecia c) allergen d) afferent nerves

2. are a diverse group of pharmacological agents used in the treatment of epileptic seizures.

a) amenorrhea b) anticonvulsants c) antiepileptic d) antivirals

3. are steroidal androgens that include natural androgens like testosterone and so on.

a) anxiolytics b) antitussives c) anti – ulcer effect d) anabolic steroids

4. are substances that reduce fever.

a) antitussives b) atony c) antipyretics d) atopen

5. are medicines that suppress coughing.

a) alopecia b) antitussives c) allergen d) agonist

6. is the cessation of breathing.

a) apnoea b) asthenia c) antiviral d) allergy

7. is the feeling of body fatigue, or tiredness.

a) acidosis b) alopecia c) asthenia d) afferent nerves

8. are used as a short-term treatment for bipolar disorder to control psychotic symptoms such as hallucinations, delusions, or mania symptoms.

a) asphyxia b) antipsychotic medications c) atrioventricular node d) atony

9. controls the heart rate.

a) agonist b) allergen c) antipyretic d) atrioventricular node

10. is a proliferative physiological process in which the body facilitates the repair of a bone fracture.

a) bone healing b) cachexia c) catabolism d) carotid sinus

11. is loss of weight, muscle atrophy, fatigue, weakness and significant loss of appetite in someone.

a) colitis b) endometriosis c) cachexia d) collapse

12. is a dilated area at the base of the internal carotid artery just superior to the bifurcation of the internal carotid and external carotid at the level of the superior border of thyroid cartilage.

a) cognitive function b) carotid sinus c) diarrhea d) dyspnea

13. is a condition of the digestive system characterized by hard feces that are difficult to pass.

a) hypotension b) hypertension c) hirsutism d) constipation

14. is the condition of having at least three loose or liquid bowel movements each day.

a) diarrhea b) constipation c) rectum d) feces

15. is the feeling that one cannot breathe well enough.

a) extrasystole b) epilepsy attack c) glaucoma d) dyspnea

16. is something that helps loosen mucus so you can cough it up.

a) heart attack b) expectorant c) erythropoietin d) fainting

17. is a loss of consciousness and muscle strength characterized by a fast onset, short duration, and spontaneous recovery.

a) fainting b) consciousness c) loss d) termination

18. is common name for myocardial infarction, when the blood supply to a part of the heart is interrupted.

a) epilepsy attack b) fainting c) heart attack d) hirsutism

19. is excessive body hair in men and women on parts of the body where hair is normally absent or minimal.

- a) infarction b) hirsutism c) hair d) diarrhea

20. is a measurement of the pressure of brain tissue and the cerebrospinal fluid that cushions and surrounds the brain and spinal cord.

- a) cachexia b) catabolism c) colitis d) intracranial pressure

21. is the fluid pressure inside the eye.

- a) intraocular pressure b) hypotension c) hypertension d) hirsutism

22..... is any technique to induce the absence of sensation in a specific part of the body, generally for the aim of inducing local analgesia, that is, local insensitivity to pain, although other local senses may be affected as well.

- a) meningitis b) metabolism c) local anesthesia d) migraine

23. is a semi-solid tissue which may be found within the spongy or cancellous portions of bones in birds and mammals.

- a) myofibril b) bone marrow c) myasthenia d) ovulation

24. can cause severe throbbing pain or a pulsing sensation, usually on just one side of the head.

- a) migraine b) headache c) brain d) bone marrow

25. is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health.

- a) proctitis b) sedative c) sepsis d) obesity

26. is an abnormal condition of the mind that results in difficulties determining what is real and what is not.

- a) probiotics b) prebiotics c) psychosis d) stomatitis

27. is recovery from illness or injury.

- a) symbiotics b) reconvalescence c) scorbutus d) surfactant

28. is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves.

- a) schizophrenia b) nerve c) disorder d) mental

29. is a disease resulting from a lack of vitamin C (ascorbic acid).
a) tetany b) toxic goiter c) stroke d) scorbutus
30. is a medical condition in which poor blood flow to the brain results in cell death.
a) sulphonamides b) stroke c) sedative d) proctitis
31. is a medical sign consisting of the involuntary contraction of muscles, which may be caused by disease or other conditions.
a) sepsis b) psychosis c) tetany d) probiotics
- 32..... is a thyroid gland that contains autonomously functioning thyroid nodules, with resulting hyperthyroidism.
a) toxic goiter b) goiter c) gland d) contamination
33. is a result of untreated leg vein problems.
a) tuberculosis b) cancer c) ulcer d) trophic ulcer
34. is a medicine taken or given to counteract a particular poison.
a) tumor b) antidote c) tranquilizer d) ventricular fibrillation
35. is when the heart quivers instead of pumping due to disorganized electrical activity in the ventricles.
a) stomatitis b) sedative c) ventricular fibrillation d) tranquilizer

Translate the following words & phrases

Task 1. Fill in the missing information of the following extracts.

1. Name the psychostimulant with (аналептична дія) _____, which is a (пуринова похідна) _____.
2. Name the process of (спонтанне зчеплення) _____ of (краплі) _____ in an emulsion to each other
3. It is known that in plants the synthesis of (вторинний резервний) _____ (крохмаль) _____ occurs in
4. A 10-year-old child has height of 178 cm and body mass of 67 kg. These (ознаки) _____ are (викликані) _____ by the (функціональні порушення) _____ of the
5. (Кількісний вміст) _____ of hydrogen peroxide can be (визначити) _____ (за допомогою) _____ of the following self-indicator method
6. A patient with high risk of (крововиливи) _____ is recommended to take vicasol (menadione) by his (лікар) _____. This drug is the (структурний аналог) _____ of
7. When tongue of an experimental rabbit is (змазані) _____ with (скипидар) _____, the (уражена ділянка) _____ reddens and its blood supply increases. What type is arterial hyperemia occurs in this case
8. Name the structural unit of a (колоїдний розчин) _____ of a medicinal substance

9. A patient presents with (стійка тахікардія) _____, exophthalmos, high (збудливість) _____, increased basal (обмін речовин) _____. What (розлад) _____ can lead to the development of his syndrome
10. After the (вилучення гною) _____ taken from urethra had been inoculated on ascitic agar, it resulted in growth of (круглі прозорі) _____ colonies. Microscopy of the colonies shows (грам-негативні) _____ kidney bean-shaped diplococci. What (збудник) _____ is it
11. Name the (реакції) _____ and (реактиви) _____ that under certain conditions allow determination of certain ions in the presence of other ions:
12. What drug is (виробляється) _____ as the result of reaction between salicylic acid and (оцтовий ангідрид) _____?
13. There are certain (вимоги) _____ to the bacteriological status of the water used in preparation of some (лікарські форми) _____. What indicator is used to (визначення) _____ general water pollution?
14. It can be safely (передбачається) _____ that the (діти) _____ born from the mothers with the history of (кір) _____ will not be affected by the (кір) _____ outbreak during their stay in the (пологовий будинок) _____. What classes of antibodies provide the infants with the (стійкість) _____ to this disease?
15. What (реагент) _____ is used in the (реакція) _____ given below?
16. During (регулярний огляд) _____ a patient presents with (збільшена щитовидна залоза) _____, exophthalmos, increased body temperature, heart rate up to 110/min. What hormone should be (вимірювати) _____ in the patient's blood in this case?

17. What type of (провідний пучок)_____ is characteristic of primary anatomical structure of a (корінь)_____?

18. A specialist of the analytical laboratory (виконує пряме)_____ iodometric (визначення)_____ of ascorbic acid. What indicator is used in this case?

19. Gastric juice analysis is of great (діагностичне значення)_____ in cases of gastric diseases. What compound is used as a (стимулятор секреції)_____ in clinical examinations?

20. How according to the Pharmacopoeia is pH (визначається)_____?

21. A doctor needs to prescribe the patient a drug for (замісної терапії)_____ after thyroidectomy. What drug would you recommend?

22. What (ліки використовуються для зупинки)

_____ a bronchospasm?

A. β -(адренергічні агоністи)_____

B. β -(адренергічні антагоністи)_____

C. α -(адренергічні агоністи)_____

D. (Інгібітори холін естерази)_____

E. (Мускаринові агоністи)_____

23. A (розчленована квітка)_____ has numerous stamens that are united by the (шматочки нитками)_____ into several (пучків)_____. What is this type of (андроциум)_____?

D. (динамічний) _____
E. (Тетрадінаmozний) _____

24. A patient was prescribed losartan for treatment of (артеріальна гіпертензія) _____. What mechanism of action does this drug have?

A. (Ангіотензин - рецепторна блокада) _____

B. (Інгібування ангіотензин - перетворюючого ферменту) _____

C. (Інгібування фосфодіестерази) _____

D. (Активація центральних α -адренорецепторів) _____

E. (Блокада кальцієвих каналів) _____

25. (Аміачний буфер) _____ and (8-оксихіноліновий розчин) _____ were added into the solution containing cations of the V analytical group, which resulted in production of a (зелено-жовтий осад) _____. What (катіони) _____ were in the solution?

26. A laboratory received ethanol and methanol. What reaction can be used (щоб розрізнити) _____ between these two substances?

A. (Йодоформний тест) _____

B. (Тест Бейлстейна) _____

C. (Формування хелатного комплексу з гідроксидом міді) _____

D. (окислення) _____

Е. (Реакція з галогенітридами неорганічних кислот)_____

27. (Виберіть кетон)_____ from the monosaccharides (наведених нижче)_____:

KEYS

ANALYTICAL CHEMISTRY

Practice

1. Choose the correct variant.

1. An is a method of quantitative analysis for determining the concentration of an acid or base.

a) back titration **b) acid – base titration** c) direct titration d) displacement titration

2. An is a class of balance designed to measure small mass in the sub-milligram range.

a) analytical chemistry b) analytical analysis c) analytical determination **d) analytical balance**

3. is an electrode of the device connected to the positive pole of battery.

a) anode b) cathode c) electrode d) wire

4. is a nontoxic or minimally toxic gas which reduces or displaces the normal oxygen concentration in breathing air.

a) asphyxiating gas b) propan gas c) methane gas d) carbon monoxide

5. occurs when two reagents are used - one that reacts with the original sample, and second that reacts with the first reagent.

- a) acid – base titration **b) back titration** c) direct titration d) displacement titration
6. is a generally cylindrical container with a flat bottom.
- a) bottle b) test – tube **c) beaker** d) burette
- 7 is a squeeze bottle with a nozzle. It is used to rinse various pieces of laboratory glasswares.
- a) flask b) syringe c) pipette **d) bottle**
8. is a graduated glass tube with a tap at one end for delivering known volumes of a liquid, especially in titrations.
- a) burette** b) beaker c) test – tube d) bottle
9. Lead Nitrate and Sodium Potassium Iodine are that form a yellow precipitate for Lead Iodine.
- a) gaseous solutions b) solid solutions **c) colourless solutions** d) liquid solutions
10. is a piece of furniture where pharmaceutical glasswares are dried.
- a) table **b) dessicator** c) scales d) items
11. is a pharmaceutical item for storage of distilled water, solutions.
- a) bottle **b) flask** c) pipette d) beaker
12. is a form of volumetric analysis in which the formation of a coloured complex is used to indicate the end point of a titration.
- a) complex formation titration** b) direct titration c) back titration d) displacement titration
13. is a strong, red colour, inclining to purple.
- a) green colour b) black colour c) yellow colour **d) crimson colour**
14. is a way to determine the contents of a substance quantitatively.
- a) direct titration** b) back titration c) complex formation titration d) displacement titration
15. is a second titration for metal ions that do not have a good indicator.
- a) direct titration b) complex formation titration **c) displacement titration** d) back titration

16. Red crystals so – called have the temperature of melting of 316 degrees above zero.

- a) **fluorescein** b) eosine c) current d) column

17. is a piece of laboratory glassware used for the evaporation of solutions.

- a) condenser **b) glass evaporating dish** c) dissicator d) flask

18. are made of glass. They are used to transfer small amounts of liquids.

- a) burettes b) beakers **c) pipettes** d) glasses

19. is a glassware device used for distillation or dry distillation of substances.

- a) glass pipette **b) glass retort** c) glass rod d) glass test – tube

20. is a piece of laboratory equipment used to mix chemicals and liquids for laboratory purposes.

- a) **glass rod** b) glass retort c) glass pipette d) glass bottle

21. is a piece of laboratory equipment used to measure the volume of a liquid.

- a) straight circular cylinder b) oblique cylinder c) inclined cylinder **d) graduated cylinder**

22. is cylindrical container with wide opening that may be sealed.

- a) bottle b) pitcher **c) jar** d) cup

23. is an hydrogen sulfide (H₂S) gas. It is a natural product of decay.

- a) odour of vinegar **b) odour of rotten eggs** c) odour of rotten apples d) odour of rotten pears

24. is a type of titration based on a dox reaction between the analyte and titrant.

- a) back titration b) displacement titration c) acid - base titration **d) oxidation – reductions titration**

25. is any product of the condensation of atmospheric water vapor that falls under gravity.

- a) oxidation **b) precipitation** c) evaporation d) nuclearization

26. is a branch of chemistry that deals with the identification of elements or grouping of elements present in a sample.

a) *qualitative analysis* b) quantitative analysis c) result of analysis d) selective analysis

27.is a branch of chemistry that deals with the determination of the amount or percentage of one or more constituents of a sample.

a) qualitative analysis **b) *quantitative analysis*** c) result of analysis d) selective analysis

28..... is a general test for the detection of halogens, nitrogen and sulphur in an organic compound.

a) reaction of unification b) reaction of identification c) reaction of separation
d) *reaction of detection*

29. Chemists often use nitrogen gas to create an inert atmosphere for a chemical reaction in a reaction vessel. It is

a) *reaction of identification* b) reaction of detection c) reaction of separation d) reaction of unification

30. is a method that converts a mixture or solution of chemical substances into two or more distinct product mixtures.

a) reaction of identification b) reaction of detection **c) *reaction of separation*** d) reaction of unification

31.is a substance or compound added to a system to cause a chemical reaction.

a) solution **b) *reagent*** c) liquid d) matter

32. may involve dissolution, extraction, reaction with some chemical species.

a) *sample preparation* b) glasswares preparation c) furniture preparation d) design preparation

33. is the process in which a representative piece of material is extracted from a larger amount and readied for analysis.

a) sample **b) *sampling*** c) object d) thing

34. is an aqueous product in which no precipitate has formed.

a) suspension b) insoluble precipitate **c) *soluble precipitate*** d) supemate

35. is the separation of iron from $\text{Al}_2(\text{SO}_4)_3$ in aqueous solutions.
 a) ***solution of iron alum*** b) solid solution c) gaseous solution d) liquid solution
36. is a piece of laboratory glassware consisting of a finger-like length of glass or clear plastic.
 a) beaker b) ***test – tube*** c) bottle d) jar
37. is a graph of the pH as a function of the amount of titrant (acid or base) added.
 a) back titration b) displacement titration c) ***titration curve*** d) acid – base titration
38. is a way of expressing concentration.
 a) determination b) measurement c) weighing d) ***titer***
39. When excess calcium hydroxide is added to limewater, a suspension of calcium hydroxide particles arise, giving it a milky aspect. It is
 a) ***turbidity of lime water*** b) turbidimetry c) titration d) measurement

ORGANIC CHEMISTRY

Practice

1. Choose the correct variant.

1. is a colourless liquid organic compound with the chemical formula CH_3COOH .
 a) sulphuric acid b) ***acetic acid*** c) oxalic acid d) uric acid
2. is the organic compound with the formula $(\text{CH}_3)_2\text{CO}$.
 a) ***acetone*** b) acetyl c) acetylene d) alcohol
3. are non-aromatic compounds.
 a) aldehyde b) acrylonitrile c) ***acidic*** d) aliphatic hydrocarbon
4. is the amino acid that has a single hydrogen atom as its side chain.
 a) anion b) aniline c) ***glycerol*** d) aromatic
5. substance doesn't contain water.
 a) anhydride b) ***anhydrous*** c) asymmetric d) butyl
6. is a organic compounds bearing the functional group $\text{R}-\text{N}=\text{N}-\text{R}'$.

a) benzene b) camphor c) carbohydrate **d) azo dye**

7. is a molecule that features two joined rings.

a) bicyclic molecule b) monatomic molecule c) macromolecular molecule d) neutral molecule

8..... is the association of a pair of homologous chromosomes physically held together by at least one DNA crossover.

a) bonding b) carbonic **c) bivalent** d) cation

9. is a lasting attraction between atoms, ions or molecules that enables the formation of chemical compounds.

a) bond b) chlorination c) coal d) configuration

10. is a colourless liquid with a "sweet" smell that can be detected at low levels.

a) amine **b) carbon tetrachloride** c) benzoic acid d) azo dye

11. is an organic compound that contains a carboxyl group (C(=O)OH).

a) uric acid b) sulphuric acid c) acetic acid **d) carboxylic acid**

12. is the lightweight black carbon and ash residue hydrocarbon produced by removing water and other volatile constituents from animal and vegetation substances.

a) coal b) dust **c) charcoal** d) sawdust

13. is an acid compound found in citrus fruits.

a) citric acid b) sulphuric acid c) acetic acid d) oxalic acid

14. is the change of the physical state of matter from gas phase into liquid phase.

a) cellulose b) carbonic c) anthracene **d) condensation**

15. is a system of connected p orbitals with delocalized electrons in a molecule, which in general lowers the overall energy of the molecule and increases stability.

a) contraction **b) conjugation** c) cycle d) cyanide

16..... is a chemical bond that involves the sharing of electron pairs between atoms.

a) covalent bond b) dimethyl c) diethyl d) cyanate

17. is a chemical compound with the chemical formula HCN.

a) uric acid b) sulphuric acid **c) cyanic acid** d) decarboxilation

18. are molecules composed of only two atoms.
 a) neutral **b) diatomic** c) micro d) monatomic
19. is an acid containing two potential protons to donate.
a) dibasic acid b) uric acid c) acetic acid d) oxalic acid
20. is an cation with valence of 2.
 a) bivalent b) ethane **c) divalent** d) ether
21. is a chemical bond between two chemical elements involving four bonding electrons instead of the usual two.
a) double bond b) bond c) bonding d) bondage
22. is a chemical compound, a simple alcohol with the chemical formula C_2H_5OH .
 a) ether **b) ethanol** c) ethylene d) formate
23. is the simplest carboxylic acid.
 a) uric acid b) oxalic acid **c) formic acid** d) acetic acid
24. is a tube or pipe that is wide at the top and narrow at the bottom, used for guiding liquid or powder into a small opening.
 a) wire b) pole c) rubber **d) funnel**
25. is a simple polyol compound.
 a) glucose **b) glycerol** c) glycol d) ion
26. are chemical species that donate an electron pair to an electrophile to form a chemical bond in relation to a reaction.
a) nucleophilic b) phenol c) polyamide d) propane
27. is an organic compound with the formula $C_2H_2O_4$.
 a) sulphuric acid **b) oxalic acid** c) acetic acid d) formic acid
28. is a heterocyclic aromatic organic compound with the chemical formula C_9H_7N .
a) quinoline b) saccharide c) scheme d) salicyl
29. is a chemical bond between two atoms involving two valence electrons.
 a) double bond b) bond **c) single bond** d) methane

30. is a polymeric carbohydrate consisting of a large number of glucose units joined by glycosidic bonds.

- a) lactose b) gele c) fertilizer **d) starch**

PHYSICAL AND COLLOID CHEMISTRY

Practice

1. Choose the correct variant.

1. has to do with the uses of aggravated conditions of heat, humidity, oxygen, sunlight, vibration which speed up the normal aging processes of items.

- a) **accelerated ageing** b) activation energy c) boiling temperature d) conjugation

2. is a general process in which molecules separate or split into smaller particles such as atoms, ions or radicals, usually in a reversible manner.

- a) association **b) dissociation** c) splitting d) combination

3. replicates the work of the real kidney.

- a) artificial stomach b) artificial liver c) artificial rectum **d) artificial kidney**

4. of an object is the total displacement during some extended period of time, divided by that period of time.

- a) average placement b) average movement **c) average displacement** d) average constituent

5. is a four carbon acid, $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$, with an unpleasant odor.

- a) **butiric acid** b) oxalic acid c) sulphuric acid d) acetic acid

6. is defined as the concentration of surfactants above which micelles form and all additional surfactants added to the system.

- a) charge b) chain **c) critical concentration of micelle – forming** d) coalescence

7. is distributed in the form of small particles (crystals, threads, films or platelets, droplets, or bubbles) in the other, continuous phase, the dispersion medium.

- a) colloidal dispersion **b) coarse – disperse system** c) condition d) equation

8. is the process by which organic substances are broken down into simpler organic matter.
- a) composition b) structure c) combination **d) decomposition**
9. water can make a liquid thinner or weaker.
- a) mixed **b) diluted** c) transferred d) drop
10. is a structure that appears on the surface of an object when it is exposed to a fluid.
- a) single electrical layer b) third electrical layer **c) double electrical layer** d) fourth electrical layer
11. is the electrical intensity or "pressure" developed by a source of electrical energy such as a battery or generator.
- a) electrical current **b) electromotive force** c) electrical cable d) electrical power
12. is soluble in both of fat and water and enables fat to be uniformly dispersed in water as an emulsion.
- a) emulsifying agent** b) equilibrium c) endothermal d) exchange
13. is a type of vaporization that occurs on the surface of a liquid as it changes into the gas phase when it reaches its boiling point.
- a) dimension b) emulsion **c) evaporation** d) decomposition
14. is the ease at which the material can be fused together or to the temperature or amount of heat required to melt a material.
- a) fusibility** b) mobility c) stationary d) movement
15. is a method of rapid elimination of cholesterol from the plasma.
- a) absorption b) adsorption **c) hemosorption** d) option
16. is the time required for the reactant concentration to decrease to one-half its initial value.
- a) double period b) first period c) full time **d) half – life period**
17. is a redox electrode which forms the basis of the thermodynamic scale of oxidation-reductions potentials.
- a) hydrogen gas electrode** b) electrode c) cathode d) anode

18. is if each of the variables is directly proportional to the multiplicative inverse (reciprocal) of the other, or equivalently if their product is a constant.

- a) hyperbolic coordinates b) direct proportional **c) *inversely proportional***
d) properties

19. is the pH at which a particular molecule carries no net electrical charge or is electrically neutral in the statistical mean.

- a) *isoelectric point*** b) point of view c) sharp point d) blunt point

20. is a tool used to determine the mole fraction (x_i) or the mass fraction (w_i) of each phase of a binary equilibrium phase diagram.

- a) leverage **b) *lever rule*** c) restriction d) measurement

21. is when light bounces off an object.

- a) lightning b) light c) light scattering **d) *light reflection***

22. is a general physical process where light is forced to deviate from a straight trajectory by one or more paths due to localized non-uniformities in the medium through which they pass.

- a) light **b) *light scattering*** c) light reflection d) dark

23. refers to how effectively electrons can get close to the nucleus.

- a) *penetration*** b) pathway c) participation d) elimination

24. is the creation of a solid substance from a solution.

- a) pressure b) protection **c) *precipitate*** d) rate

25. is a chemical reaction in which the oxidation states of atoms are changed.

- a) second **b) *redox*** c) singular d) solute

26. is an electrode which has a stable and well-known electrode potential.

- a) *reference electrode*** b) reference cathode c) reference anode d) reference

27. is a substance which lowers the surface tension of the medium in which it is dissolved.

- a) sedimentation b) selectivity **c) *surface active substance*** d)
electrode

28. is a reference electrode based on the reaction between elemental mercury and mercury(I) chloride.
- a) saturation b) cathode c) anode **d) saturated calomel electrode**
29. is a naturally occurring material that is broken down by processes of weathering and erosion.
- a) development **b) sediment** c) solution d) maceration
30. is a type of biological or synthetic, polymeric membrane that will allow certain molecules or ions to pass through it by diffusion.
- a) permeable membrane b) membrane **c) semipermeable membrane** d) permeability
31. is a substance that dissolves a solute resulting in a solution.
- a) solution b) solubility c) to dissolve **d) solvent**
32. Particles of the same substance that
- a) stick together** b) hold together c) stay together d) be together
33. is the elastic tendency of a fluid surface which makes it acquire the least surface area possible.
- a) surface activity b) surface layer **c) surface tension** d) synergy
34. is the measure of its resistance to gradual deformation by shear stress or tensile stress.
- a) transition b) wavelength c) limit **d) viscosity**
35. interaction is an all-inclusive term to describe various progressive interactions between clay minerals and water.
- a) acid – water b) hydrogen **c) water – clay** d) electricity

PATHOLOGICAL PHYSIOLOGY

Practice

1. Choose the correct variant.

1. is a collection of health effects that are present within 24 hours of exposure to high doses of ionizing radiation.

- a) radiation **b) acute radiation sickness** c) X – ray d) sickness
2. are endocrine glands that produce a variety of hormones including adrenaline and the steroids - aldosterone and cortisol.
- a) adrenal glands** b) thyroid glands c) genes d) membranes
3. is a mass of cells that lack the ability to invade neighboring tissue or metastasize.
- a) cancer b) decomposition **c) benign tumor** d) swelling
4. is the process by which blood changes from a liquid to a gel, forming a blood clot.
- a) blood contamination b) blood poisoning c) blood change **d) blood coagulation**
5. is the maximum quantity of oxygen that will combine chemically with the hemoglobin in a unit volume of blood.
- a) blood oxygen capacity** b) hydrogen c) oxygen d) hemoglobin
6. is a resilient and smooth elastic tissue, a rubber-like padding that covers and protects the ends of long bones at the joints.
- a) catarrhal b) burn c) bleeding **d) cartilage**
7. occurs when the blood supply to part of your brain is interrupted or reduced.
- a) arterial hyperemia b) atrophy **c) cerebral stroke** d) cyanosis
8. is the process by which blood changes from a liquid to a gel, forming a blood clot.
- a) clotting** b) cortex layer c) brain d) forehead
9. is a therapy technique used in physical therapy, where blockage of blood in an area of the body is deliberately made.
- a) cerebral stroke **b) compression ischemia** c) consciousness d) decompression
10. is a condition characterized by large amounts of dilute urine and increased thirst.

- a) diabetes mellitus b) delayed type c) *diabetes insipidus* d) embolus
11. is a group of metabolic disorders in which there are high blood sugar levels over a prolonged period.
- a) examination b) *diabetes mellitus* c) eyelid d) fever
12. is the feeling that one cannot breathe well enough.
- a) gastric juice b) edema d) tumor d) *dyspnea*
13. is the rate at which red blood cells sediment occurs in a period of one hour.
- a) *erythrocyte sedimentation rate* b) precipitate c) white cells d) red cells
14. is an abnormal enlargement of your thyroid gland.
- a) breath b) ischemia c) *goiter* d) larynx
15. is a kind of skin rash with red, raised, itchy bumps.
- a) rash b) *hives* c) redness d) ivy
16. is a sleep disorder where people have trouble sleeping.
- a) *insomnia* b) sleep c) slumber d) sleepless
17. is heart's main pumping chamber.
- a) larynx b) heart c) *left ventricular* d) chamber
18. is an ovoid or kidney-shaped organ of the lymphatic system.
- a) lung b) neck c) chin d) *lymph node*
19. are cancerous tumors that can potentially result in death.
- a) *malignant tumors* b) tumors c) cancers d) suffocations
20. is a pale colour of the skin that can be caused by illness, emotional shock or stress, stimulant use, or anemia.
- a) poisoning b) *pallor* c) purine d) redness
21. is the measure of the ability of a material to support the formation of a magnetic field within itself.
- a) leukemic failure b) irritation c) *permeability* d) disorder
22.are components of blood whose functions are to react to bleeding from blood vessel injury by clumping, thereby initiating a blood clot.
- a) illnesses b) *platelets* c) organs d) blood vessels

23. is fluid accumulation in the tissue and air spaces of the lungs.
 a) purine basis b) nephron c) tongue **d) *pulmonary edema***
24. is an acute form of exudative inflammation in which the enzymes produced by white blood cells cause liquefaction of the affected tissues, resulting in the formation of pus.
 a) inflammation b) heart attack **c) *purulent inflammation*** d) pus
25. is an exudate, typically white-yellow, yellow, or yellow-brown, formed at the site of inflammation during bacterial or fungal infection.
a) *pus* b) edema c) inflammation d) pain shock
26. is an area of swelling of the lower layer of skin and tissue just under the skin.
a) *Quincke's edema* b) platelet c) tumor d) decomposition
27. is an abnormal redness or flushing of the skin.
 a) ulcer b) vein **c) *redness*** d) stasis
28. results from the biological process of wound repair in the skin, as well as in other organs and tissues of the body.
 a) wound b) smell c) serum **d) *scar***
29. is a reaction to proteins in antiserum derived from a non-human animal source, occurring 5–10 days after exposure.
 a) seasickness b) airsickness **c) *serum sickness*** d) dyspnea
30. is a severe deficiency in caloric energy intake, below the level needed to maintain an organism's life.
a) *starvation* b) reduction c) serum d) biology
31. is a condition of severely deficient supply of oxygen to the body that arises from abnormal breathing.
 a) hanging b) falling **c) *suffocation*** d) jumping
32. is a transient abnormal enlargement of a body part or area not caused by proliferation of cells.
 a) inflammation b) rash c) cerebral stroke **d) *swelling***

33. is an autoimmune disease in which the body's immune system mistakenly attacks healthy tissue in many parts of the body.
 a) *systemic lupus erythematosus* b) hives c) rash d) redness
34. is a tough band of fibrous connective tissue that usually connects muscle to bone and is capable of withstanding tension.
 a) ankle b) toe c) *tendon* d) cartilage
35. is an endocrine gland in the neck, consisting of two lobes connected by an isthmus.
 a) lymph node b) ear c) eyebrow d) *thyroid gland*

BIOCHEMISTRY

Practice

- 1..... is an anatomical term for loose connective tissue composed of adipocytes.
 a) *adipose tissue* b) absorption c) adsorption d) evaporation
2. is a homodimeric protein enzyme of 86 kilodaltons.
 a) alkaline battery b) alkaline c) biliary obstruction d) *alkaline phosphatase*
3. are steroid acids found predominantly in the bile of mammals and other vertebrates.
 a) sulphuric acids b) *bile acids* c) uric acids d) acetic acids
4. blocks the bile ducts, which carry bile to the small intestine for digestion and waste removal.
 a) chylomicron b) citric acid c) *biliary obstruction* d) tricarboxylic acid cycle
5. is interruption of a chemical pathway owing to one chemical substance inhibiting the effect of another by competing with it for binding or bonding.
 a) *competitive inhibition* b) exudation c) decomposition d) composition
6. may also be caused by infections, trauma to the eye, chemical burns, immune system diseases and certain other eye conditions, such as uveitis, glaucoma.

a) determination b) diarrhea **c) cornea vascularisation** d)
disorder

7. are a sudden, involuntary muscle contraction or over-shortening ; while is generally temporary and non-damaging.

a) consumption **b) cramps** c) diabetes insipidus d) derivative

8. is the breakdown of large insoluble food molecules into small water-soluble food molecules.

a) digestion b) ethanol c) fermentation d) cycle

9. is an abnormal accumulation of fluid in the interstitium, located beneath the skin and in the cavities of the body.

a) decrease b) increase c) order **d) edema**

10. is a hormone, neurotransmitter, and medication.

a) methane **b) epinephrine** c) morphine d) injection

11. is a redox coenzyme, more specifically a prosthetic group of a protein, involved in several important enzymatic reactions in metabolism.

a) festering wound b) free radicals **c) flavin adenine dinucleotide** d) gall –
bladder

12. is a metabolic process that produces chemical changes in organic substrates through the action of enzymes.

a) wound b) pus c) decomposition **d) fermentation**

13. When a cut gets infected, it starts to and smell bad.

a) rotten **b) fester** c) blow up d) change

14. is a small hollow organ where bile is stored and concentrated before it is released into the small intestine.

a) liver **b) gall – bladder** c) stomach d) intestine

15. is a stone formed within the gall - bladder out of bile components.

a) gall – stone b) gall – bladder c) liver d) stomach

16. is a swelling in the neck resulting from an enlarged thyroid gland.

a) neck b) chin **c) goiter** d) ear

17. is a form of inflammatory arthritis characterized by recurrent attacks of a red, tender, hot, and swollen joint.

- a) rash **b) gout** c) hives d) itch

18. is caused by inadequate plaque removal. Plaque contains germs which attack the healthy tissue around the teeth.

- a) gum bleeding** b) bleeding c) teeth d) lips

19. is a yellowish or greenish pigmentation of the skin and whites of the eyes due to high bilirubin levels.

- a) gout b) hives c) lactose **d) jaundice**

20. is one of the five major groups of lipoprotein which transport all fat molecules around the body in the extracellular water.

- a) lipid peroxidation **b) low – density lipoproteins** c) inhibition d) maple syrup disease

21. is the process in which free radicals "steal" electrons from the lipids in cell membranes, resulting in a cell damage.

- a) noncompetitive inhibition b) epinephrine **c) lipid peroxidation** d) high energy compound

22. is an autosomal recessive metabolic disorder affecting branched-chain amino acids.

- a) maple syrup disease** b) illness c) elimination d) evaporation

23. is a condition making it difficult or impossible to see in relatively low light.

- a) night blindness** b) blindness c) visibility d) sore eyes

24. is the process of converting pyruvate to acetyl-CoA.

- a) oxidation b) decarboxylation c) determination **d) oxidation**
decarboxylation of pyruvate

25. is an organic compound with the formula $H_2NC_6H_4CO_2H$.

- a) acetic acid **b) para – aminobenzoic acid** c) oxalic acid d) uric acid

26. is a condition that results in weak or soft bones in children.

- a) rickets** b) limping c) dislocation d) fracture

27. is an effect based on the electrolyte-non electrolyte interaction, in which the non-electrolyte could be less soluble at high salt concentrations.

- a) whitening b) spitting **c) salting - out** d) vomiting

28. is a disease resulting from a lack of vitamin C (ascorbic acid).

- a) quinzly **b) scurvy** c) scarlet fever d) fever

29. is a group of disorders that affects hemoglobin, the molecule in red blood cells that delivers oxygen to cells throughout the body.

- a) leukemia b) anemia c) brain **d) sickle – cell anemia**

30. is a severe deficiency in caloric energy intake, below the level needed to maintain an organism's life.

- a) overfeeding b) eating **c) starvation** d) lunch

31. is a disaccharide (glucose + fructose) with the molecular formula $C_{12}H_{22}O_{11}$.

- a) saccharide **b) sucrose** c) lactose d) glucose

32. has the three dimensional shapes of a protein.

- a) body structure b) structural pattern **c) tertiary structure** d) structure

33. is the craving for fluids, resulting in the basic instinct of animals to drink.

- a) hunger b) tiredness c) rickets **d) thirsty**

34. is an endocrine gland in the neck, consisting of two lobes connected by an isthmus.

- a) thyroid gland** b) goiter c) double chin d) chin

35. is a thiamine (vitamin B₁) derivative which is produced by the enzyme thiamine diphosphokinase.

- a) thiamine derivative b) sucrose **c) thiamine pyrophosphate** d) lactose

36. is a mitochondrial inner membrane protein that is a regulated proton channel or transporter.

- a) membrane b) protein c) thyroid gland **d) uncoupler**

37. is an organic compound with chemical formula $CO(NH_2)_2$.

- a) urea** b) uric acid c) urine d) acetic acid

38. is a liquid by-product of metabolism in humans and in many animals.

- a) uric acid b) urea c) *urine* d) sulphuric acid

39. is a type of injury which happens relatively quickly in which skin is torn, cut, or punctured (an open wound).

- a) cut b) *wound* c) ill d) sick

PHARMACEUTICAL BOTANY

Practice

1. Choose the correct variant.

1. is a cell that displays antigen complexes with major histocompatibility complexes (MHCs) on their surfaces.

- a) *accessory cell* b) dead cell c) alive cell d) cell

2. is a fruit in which some of the flesh is derived not from the ovary but from some adjacent tissue exterior to the carpel.

- a) vegetable b) food c) *aggregate –accessory fruit* d) dairy product

3. are the most diverse group of land plants.

- a) anisocytic b) annual plants c) apical meristem d) *angiosperms*

4. is a plant collected from the phloem or bast surrounding the stem of certain dicotyledonous plants.

- a) fiber b) *bast fiber* c) cartilage d) flower

5. is a flowering plant that takes two years to complete its biological lifecycle.

- a) annual plant b) flowering plant c) addition root d) *biennial plant*

6. is a zygomorphic, sympetalous corolla with the limb divided into two lips.

- a) *bilabiate corolla* b) collateral bundle c) collenchyma d)

companion cell

7. is a fruit with a large "stone" inside.

- a) bundle b) root c) *stone – fruit* d) stem

8. is a colony containing a fixed number of cells, with little or no specialization.

a) cincinnus **b) coenobium** c) bundle d) plant

9. are a division of vascular land plants containing a single extant class.

a) cutinization b) cystoliths c) buds **d) conifers**

10. is a rounded underground storage organ consisting of a swollen stem base covered with scale leaves.

a) corymb **b) corm** c) conifer d) branch

11. is a botanical term for an inflorescence with the flowers growing in such a fashion that the outermost are born on longer pedicels.

a) corymb b) corm c) bulb d) root

12. winds along the surface of the soil by issuing many vertical branches.

a) exoderm b) endoderm c) embryo root **d) creeping stem**

13. forms as a result of an equal division of a terminal bud into two equal branches.

a) dichotomous branching b) dicotyledon c) didynamous d) druse

14. are one of the two groups into which all the flowering plants or angiosperms were formerly divided.

a) druses b) didynamous **c) dicotyledons** d) dichotomous branchings

15. has four stamens disposed in pairs of unequal length.

a) druse **b) didynamous** c) dicotyledon d) fibril

16. has the form of a funnel or cone.

a) funnelform b) rhizome c) bulb d) branch

17. are internal buds found in sponges and are involved in asexual reproduction.

a) glossy black berries b) glycogen **c) gemmules** d) funnelforms

18. are a group of seed-producing plants.

a) halophytes b) hesperidium c) internode **d) gymnosperms**

19. is a group or cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches.

a) bud **b) inflorescence** c) stem d) branch

20..... are the completely undifferentiated meristems in a plant.

a) intercalary meristems b) inulins c) cynarodium d) lateral meristems

21. extend horizontally from the primary root (radicle) and serve to anchor the plant securely into the soil.

a) legumes **b) lateral roots** c) mesoderms d) ovoids

22. is a plant in the family Fabaceae (or Leguminosae), either the fruit or a seed of such a plant.

a) pedicle **b) legume** c) ocrea d) phloem

23. is a thin outgrowth at the junction of leaf and leafstalk of many grasses.

a) halophyte b) chlorenhyma c) paracytic **d) ligulate**

24. It is so – called when the stamens of a flower are united as a tube around the style of the carpel.

a) monocotyledon **b) monoadelphous** c) multilayer palisade d) microfilaments

25. have four distinct structural features: leaves, stems, roots and flowers.

a) monoadelphous b) perigonium **c) monocotyledons** d) cynarodium

26. is a plant structure formed of stipules fused into a sheath surrounding the stem.

a) ocrea b) ovoid c) palmatipartite d) pedicle

27. has the same shape as an egg, or of a similar shape.

a) xylem b) thyrsus c) stamen **d) ovoid**

28. has lobes with incisions that extend over half-way toward the petiole.

a) palmatipartite b) receptacle c) root cap d) fibrilla

29. has a superior and inferior notch that forms an intervertebral foramen with a pedicle on an adjacent vertebra.

a) sieve tube b) spadix **c) pedicle** d) silique

30. is a plant that lives more than two years.

a) sliming **b) perennial plant** c) plasmodesma d) raceme

31. is the sterile parts of a flower.

- a) *perigonium* b) vine c) meristem d) radial bundle

32. are all the veins are present in the form of a net work.

- a) tendrils b) stem c) bud **d) *pinnate – reticulates***

33. is the female reproductive part of a flower.

- a) .tubular **b) *pistil*** c) wound meristem d) rhizome

34. are a very heterogeneous group of extinct plants with mostly fern-like foliage but with real seeds.

- a) *pteridosperms* b) plasmodesma c) endoderm d) angiosperms

35. is an unbranched, indeterminate type of inflorescence bearing pedicellate flowers along its axis.

- a) rhizome b) bulb **c) *raceme*** d) fern

36. is the first part of a seedling (a growing plant embryo) to emerge from the seed during the process of germination.

- a) inulin **b) *radicle*** c) cynarodium d) black berry

37. is an organ or structure which receives a secretion, eggs, sperm.

- a) *receptacle*** b) tracheids c) tendrils d) fern

38. is the only stem of the plant.

- a) addition root b) anisocytic c) bast fiber **d) *rhizome of fern***

39. are elongated living cells (sieve-tube elements) of the phloem, the nuclei of which have fragmented and disappeared and the transverse end walls of which are pierced by sievelike groups of pores.

- a) biennial plants **b) *sieve tubes*** c) annual plants d) plants

40. is a type of fruit (seed capsule) having two fused carpels with the length being more than three times the width.

- a) *silique*** b) spadix c) legume d) mesoderm

41. is a type of spike inflorescence having small flowers borne on a fleshy stem.

- a) stem b) paracytic **c) *spadix*** d) glycogen

42. is the pollen-producing reproductive organ of a flower.

- a) corymb b) creeping stem c) cystolith **d) stamen**

43. is a specialized stem, leaves or petiole with a threadlike shape.

- a) **tendrils** b) pedicle c) ocrea d) gemmule

MICROBIOLOGY

Practice

1. Choose the correct variant.

1. include many types of cancer, particularly those of the bone marrow and blood cells (leukemia, lymphoma, multiple myeloma), and certain chronic infections.

- a) **acquired immunodeficiencies** b) illnesses c) diseases d) disorder

2. is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as *Bacillus anthracis*.

- a) hives b) ulcer **c) anthrax** d) pollution

3. is a medication made up of antibodies against the tetanus.

- a) artificial active immunity **b) antitetanus immunoglobulin** c) anti – viral drug
d) autoclaving

4. causes gastroenteritis, an inflammation of the gastrointestinal tract involving both of the stomach and the small intestine.

- a) allergen b) antibiotic **c) acute intestinal infection** d) amoebic
dysentery

5. is a laboratory method to check for certain antibodies or antigens in a variety of body fluids including saliva, urine, cerebrospinal fluid, or blood.

- a) blood tellurium agar b) bactericidal c) anaerobic wound infection **d)**
agglutination test

6. is a disorder of sight due to the eye and brain not working well together.

- a) **amblyopia** b) coli – index c) capsular bacteria d) bismuth
sulfite agar

7. inhibits the synthesis of mycolic acid, resulting in disruption of the bacterial cell walls.

- a) penicillin b) antitetanus immunoglobulin **c) *anti – TB action*** d)
blue - green pigment

8. are germs. They are different in size and shape.

- a) illnesses **b) *bacteria and fungi*** c) disorders d) contamination

9. is a type of asexual reproduction in which a new organism develops from an outgrowth or bud due to cell division at one particular site.

- a) *budding reproduction*** b) colienteritis c) capsular bacteria d) amoebic
dysentery

10. is an infection caused by the bacterium *Corynebacterium diphtheriae*.

- a) autoclaving b) allergens c) immunity **d) *causative agent of diphtheria***

11. refers to the contamination of our environment and or food source with microscopic organisms, like viruses, bacteria, fungi, and parasites.

- a) drying **b) *degree of biological contamination*** c) disinfection of
air d) elective medium

12. indicates, utilizes hot air that is either free from water vapor, or has very little of it, and where this moisture plays a minimal or no role in the process of sterilization.

- a) *dry heat*** b) enrichment medium c) evaluation of the general d)
infection

13. based on a physical exam, medical and immunization history, and the signs and symptoms of muscle spasms, stiffness and pain.

- a) temperature b) diagnosis of fever **c) *diagnosis of tetanus*** d) diagnosis of
infection

14. is used for the estimation of coliform bacteria in water samples using the membrane filtration technique.

- a) flowing stream b) streams c) flagellum **d) *endo broth***

15..... indicates that the water has been contaminated with the fecal material of humans or other animals.

a) **faecal contamination of water** b) bacteria and fungi c) pollution d) contamination

16. is a lash-like appendage that protrudes from the cell body of certain bacterial and eukaryotic cells and whose primary function is locomotion.

a) mechanism of infection b) **flagellum** c) streptobacilli d) microbial number

17. have square ends and are arranged in long chains.

a) **gram – positive streptobacilli** b) gram – negative microorganisms c) gram – positive rods with chopped ends d) general pollution of water

18. is a spectrum of conditions caused by infection with the human immunodeficiency virus (HIV).

a) hemolytic streptococci b) infectious mononucleosis c) isolation of pure cultures d) **HIV infection**

19. contains antibodies.

a) **immune serum** b) immunology c) liquid preparation d) syrup

20. was based on spores from the Sterne strain of B. anthracis.

a) live attenuated vaccine b) serial dilution c) **live vaccine STI** d) antibiotics

21. is a complex process ultimately dependent on tumor cells.

a) membrane filter method b) **tumor growth** c) drugs d) live attenuated vaccine

22. is defined as the lowest concentration of an anti- microbial that will inhibit the visible growth of a microorganism after overnight incubation.

a) microorganisms resistance b) identification of a selective culture c) pseudomonas d) **minimum inhibitory concentration of the antibiotic**

23.recognizes the presence of microorganisms in general and specific pathogenic microorganisms.

a) *microbiological purity* b) non – sewn filaments of a micelle c)
penetration into tissue d) precipitate reaction in gel

24. cannot reproduce outside their host cell, meaning that
the parasite's reproduction is entirely reliant on intracellular resources.

a) picornaviruses b) assessment c) *obligatory intracellular parasitism* d)
organisms

25. has antibodies for protection against respiratory infection with
Francisella tularensis.

a) injections b) *prophylactic and therapeutic serum* c) liquid preparations
d) syrup

26. depends on antibiotics which must be active against the offending
pathogen(s) and must reach sufficient concentrations at the site of infection where
microorganisms have induced severe inflammation.

a) diseases b) vaccines c) *penetration into tissue* d)
toxigenicity

27. is a method widely used in molecular biology to make many copies of a
specific DNA segment.

a) *polymerase chain reaction* b) quick reaction c) secondary immune response
d) specific hereditary immunity

28. are types of bacteria used to detect and estimate the level of faecal
contamination of water.

a) trichomoniasis b) ulcer c) *sanitary – indicative microorganisms*
d) Seitz filter

29. is a member of the phylum **Spirochaetes** which contains distinctive
diderm (double-membrane) **bacteria**.

- a) *Treponema pallidum* b) yeast fungi c) restoration of normal microflora

d) *spirochaete bacterium*

30. is a member of the coagulase-negative staphylococci (CoNS).

- a) *S. haemolyticus* b) endo broth c) dry heat d) drying

31. is an infection in any part of urinary system.

- a) infection b) *urinary tract infection* c) treatment of infection d) contamination

32. is a discontinuity or break in a bodily membrane that impedes the organ to continue its normal functions.

- a) liver cirrhosis b) leukemia c) *ulcer* d) tumor

33. are eukaryotic, single-celled microorganisms classified as members of the **fungus** kingdom.

- a) **difteria of the throat** b) viruses c) **disinfection of air** d) *yeast fungi*

PHARMACOLOGY

Practice

1. Choose the correct variant.

1. The diagnosis of the should be made by measuring quantitative PBG before starting specific treatment for porphyria.

- a) *acute attack* b) alopecia c) allergen d) afferent nerves

2. are a diverse group of pharmacological agents used in the treatment of epileptic seizures.

- a) amenorrhea b) *anticonvulsants* c) antiepileptic d) antivirals

3. are steroidal androgens that include natural androgens like testosterone and so on.

a) anxiolytics b) antitussives c) anti – ulcer effect **d) anabolic steroids**

4. are substances that reduce fever.

a) antitussives b) atony **c) antipyretics** d) atopen

5. are medicines that suppress coughing.

a) alopecia **b) antitussives** c) allergen d) agonist

6. is the cessation of breathing.

a) apnoea b) asthenia c) antiviral d) allergy

7. is the feeling of body fatigue, or tiredness.

a) acidosis b) alopecia **c) asthenia** d) afferent nerves

8. are used as a short-term treatment for bipolar disorder to control psychotic symptoms such as hallucinations, delusions, or mania symptoms.

a) asphyxia **b) antipsychotic medications** c) atrioventricular node d) atony

9. controls the heart rate.

a) agonist b) allergen c) antipyretic **d) atrioventricular node**

10. is a proliferative physiological process in which the body facilitates the repair of a bone fracture.

a) bone healing b) cachexia c) catabolism d) carotid sinus

11. is loss of weight, muscle atrophy, fatigue, weakness and significant loss of appetite in someone.

a) colitis b) endometriosis **c) cachexia** d) collapse

12. is a dilated area at the base of the internal carotid artery just superior to the bifurcation of the internal carotid and external carotid at the level of the superior border of thyroid cartilage.

a) cognitive function **b) carotid sinus** c) diarrhea d) dyspnea

13. is a condition of the digestive system characterized by hard feces that are difficult to pass.

a) hypotension b) hypertension c) hirsutism **d) constipation**

14. is the condition of having at least three loose or liquid bowel movements each day.

- a) **diarrhea** b) constipation c) rectum d) feces

15. is the feeling that one cannot breathe well enough.

- a) extrasystole b) epilepsy attack c) glaucoma **d) dyspnea**

16..... is something that helps loosen mucus so you can cough it up.

- a) heart attack **b) expectorant** c) erythropoietin d) fainting

17..... is a loss of consciousness and muscle strength characterized by a fast onset, short duration, and spontaneous recovery.

- a) fainting** b) consciousness c) loss d) termination

18. is common name for myocardial infarction, when the blood supply to a part of the heart is interrupted.

- a) epilepsy attack b) fainting **c) heart attack** d) hirsutism

19. is excessive body hair in men and women on parts of the body where hair is normally absent or minimal.

- a) infarction **b) hirsutism** c) hair d) diarrhea

20. is a measurement of the pressure of brain tissue and the cerebrospinal fluid that cushions and surrounds the brain and spinal cord.

- a) cachexia b) catabolism c) colitis **d) intracranial pressure**

21. is the fluid pressure inside the eye.

- a) intraocular pressure** b) hypotension c) hypertension d) hirsutism

22..... is any technique to induce the absence of sensation in a specific part of the body, generally for the aim of inducing local analgesia, that is, local insensitivity to pain, although other local senses may be affected as well.

- a) meningitis b) metabolism **c) local anesthesia** d) migraine

23. is a semi-solid tissue which may be found within the spongy or cancellous portions of bones in birds and mammals.

- a) myofibril **b) bone marrow** c) myasthenia d) ovulation

24. can cause severe throbbing pain or a pulsing sensation, usually on just one side of the head.

- a) *migraine* b) headache c) brain d) bone marrow

25. is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health.

- a) proctitis b) sedative c) sepsis **d) obesity**

26. is an abnormal condition of the mind that results in difficulties determining what is real and what is not.

- a) probiotics b) prebiotics **c) psychosis** d) stomatitis

27. is recovery from illness or injury.

- a) symbiotics **b) convalescence** c) scurvy d) surfactant

28. is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves.

- a) schizophrenia** b) nerve c) disorder d) mental

29. is a disease resulting from a lack of vitamin C (ascorbic acid).

- a) tetany b) toxic goiter c) stroke **d) scurvy**

30. is a medical condition in which poor blood flow to the brain results in cell death.

- a) sulphonamides **b) stroke** c) sedative d) proctitis

31. is a medical sign consisting of the involuntary contraction of muscles, which may be caused by disease or other conditions.

- a) sepsis b) psychosis **c) tetany** d) probiotics

32. is a thyroid gland that contains autonomously functioning thyroid nodules, with resulting hyperthyroidism.

- a) toxic goiter** b) goiter c) gland d) contamination

33. is a result of untreated leg vein problems.

- a) tuberculosis b) cancer c) ulcer **d) trophic ulcer**

34. is a medicine taken or given to counteract a particular poison.

- a) tumor **b) antidote** c) tranquilizer d) ventricular fibrillation

35. is when the heart quivers instead of pumping due to disorganized electrical activity in the ventricles.

- a) stomatitis b) sedative **c) *ventricular fibrillation*** d)
tranquilizer

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