

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ОДЕСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

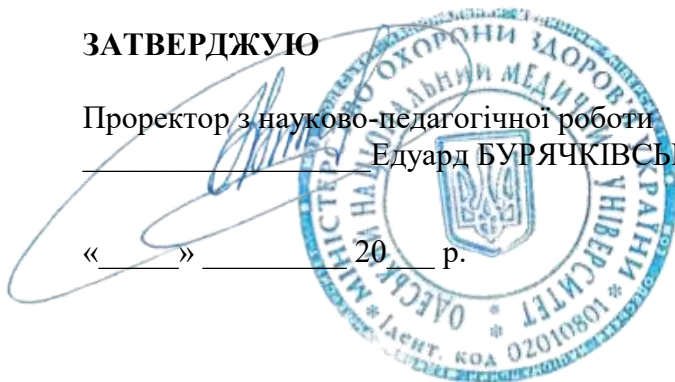
Кафедра філософії, біоетики та іноземних мов

ЗАТВЕРДЖУЮ

Проректор з науково-педагогічної роботи

Едуард БУРЯЧКІВСЬКИЙ

«_____» _____ 20__ р.



МЕТОДИЧНІ РЕКОМЕНДАЦІЇ
ДО САМОСТІЙНОЇ РОБОТИ ЗДОБУВАЧІВ ВИЩОЇ ОСВІТИ
З НАВЧАЛЬНОЇ ДИСЦИПЛІНИ

«ІНОЗЕМНА МОВА ЗА ПРОФЕСІЙНИМ СПРЯМУВАННЯМ»

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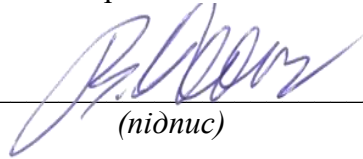
Освітньо-професійна програма: Фармація, промислова фармація

Затверджено:

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Тема № 1: GREEK-LATIN TERM ELEMENTS IN THE ENGLISH MEDICAL TERMINOLOGY

Мета: ознайомити здобувачів вищої освіти з греко-латинськими терміноелементами, які використовуються у медичній термінології

Основні поняття: греко-латинські терміноелементи, англійська медична термінологія

I. План

1. Терміноелементи латинського походження
2. Терміноелементи грецького походження

II. Практичні заняття, які виконуватимуться

Exercise 1. Fill in the blanks:

1. Inflammation of the liver is called _____.
2. The word biligenesis means the formation of _____.
3. A cholelith is a(n) _____.
4. Choledochotomy is incision of the _____.
5. Cholecystectomy is removal of the _____.
6. Hepatomegaly is enlargement of the _____.
7. Cholangitis is inflammation of a(n) _____.
8. Hepatosplenomegaly is the simultaneous enlargement of both the _____ and the _____.
9. Pancreatolysis is _____ of the pancreas.
10. Pancreatitis is _____ of the pancreas.

Exercise 2. Write words for the following definitions using the word parts provided. Each word part can be used more than once.

-itis -logy -ptosis nephro- gastr- cardio- neuro-

1. Inflammation of the stomach _____
2. Study of the nervous system _____
3. Dropping of the kidney _____
4. Study of the kidney _____
5. Inflammation of a nerve _____
6. Downward displacement of the heart _____

mon(o)- -al dextr(o) end(o) macro cardi cyt -ic ecto micro -ia

1. Pertaining to a very small cell _____
2. A condition in which the heart is outside its normal position _____
3. Pertaining to a cell with a single nucleus _____
4. Condition in which the heart is displaced to the right _____
5. Pertaining to the innermost layer of the heart _____
6. Pertaining to a very large cell _____
7. Condition in which the heart is extremely small _____

Exercise 3. Explain the medical terms analyzing the term elements

Thyroidectomy -

Thyrotomy -

- a. bradykinesia* *b. dyskinesia*
c. kinesiotherapy *d. tachykinesia*
13. Cephalometry is
a. a headache *b. an instrument used to measure the head.*
c. measurement of the head *d. study of the head*
14. A lipoma is
a. the breakdown of lipids in digestion *b. a benign tumor composed of fatty tissue*
c. surgical crushing of a stone *d. an ectopic pregnancy*
15. Aphonia is
a. absence of speech *b. difficult speech*
c. rapid speech *d. absence or loss of voice*
16. Cryptorchidism means
a. tissue compatibility *b. undescended testicle*
c. within a vein *d. without water*
17. A record or tracing of the electrical impulses of the heart is called an
a. electrocardiograph *b. electrocardiogram*
c. electrocardiography *d. electrocardiopathy*
18. A term for a large cell, usually restricted to mean an extremely large red blood cell, is
a. erythrocyte *b. megalocyte*
c. microcyte *d. phagocyte*
19. A patient who has a stroke usually displays deficits on the other side of the body. For instance, a patient with a right-side stroke has left hemiparesis. Which term best describes the location of the weakness in relation to the area of the stroke?
a. bilateral *b. contralateral*
c. ipsilateral *d. unilateral*
20. A woman who has just given birth is considered to be
a. antepartum *b. postpartum*
c. primigravida *d. multigravida*
21. Which term means inflammation of the tear sac?
a. dacryolithiasis *b. dacryocyst*
c. dacryocystitis *d. lacrimitis*
22. Surgical puncture of the chest wall for aspiration of fluids is called
a. open thoracic surgery *b. thoracentesis*
c. thoracodynia *d. thoracoplasty*
23. A term that means tumor of a sweat gland is
a. hematoma *b. hidradenoma*
c. hydrophobia *d. omphaloma*
24. You're treating a patient who has a swollen eyelid caused by an infected eyelash. What's the proper term for the eyelid condition?
a. blepheral *b. blepharitis*
c. blepharoplegia *d. blepharospasm*
25. A patient has a disease of the fingernails of unknown cause. What's the term that best describes this condition?
a. onychectomy *b. onychomalacia*
c. onychomycosis *d. onychopathy*
26. Replacement of bone marrow by fibrous tissue is called
a. fibrosclerosis *b. myelofibrosis*
c. osteoarthritis *d. osteofibrosis*
27. The term that means pertaining to a rib and a vertebra is
a. costal *b. costovertebral*
c. spondylocostal *d. sternocostal*
28. A condition in which the whole spine is stiffened is called

- a. ankylosed spine* *b. kyphosis*
c. scoliosis *d. spina bifida*
29. A term that means pertaining to the wrist and the fingers is
a. carpophalangeal *b. metacarpal*
c. metatarsal *d. tarsophalangeal*
30. Which adjective does not pertain to a bone of the arm?
a. costal *b. humeral*
c. radial *d. ulnar*
31. Atelectasis is
a. a collapsed or airless condition of the lungs
b. an acute, contagious respiratory infection
c. chronic dilation of the lungs
d. paroxysmal dyspnea
32. Rhinitis is inflammation of the
a. chest *b. nose*
c. throat *d. voice box*
33. A respiratory condition in which there's discomfort in breathing in any position except sitting erect or standing is
a. apnea *b. bradypnea*
c. orthopnea *d. tachypnea*
34. A 75-year-old woman with a left cerebrovascular accident (stroke) is now unable to speak. You document which term to indicate this deficit?
a. anoxia *b. aphasia*
c. dysphasia *d. dysphonia*
35. Which term means any dry condition?
a. hidrosis *b. ichthyosis*
c. necrosis *d. xerosis*
36. Paralysis affecting like parts on both sides of the body is
a. cerebral palsy *b. diplegia*
c. hemiplegia *d. paraplegia*
37. Which of the following terms means a nervous condition characterized by chronic weakness and fatigue?
a. narcolepsy *b. neurasthenia*
c. neurolysis *d. neurosclerosis*
38. The term for localized dilation of the wall of a cerebral artery is
a. cerebral aneurysm *b. cerebral contusion*
c. epidural hematoma *d. intracerebral hematoma*
39. Severe headache is
a. analgesic *b. cephalgia*
c. cerebral contusion *d. neuralgia*
40. Which term means inflammation of the eyelid?
a. blepharitis *b. ophthalmitis*
c. photophobia *d. ptosis*
41. Gastrocele means herniation of the
a. gallbladder *c. liver*
b. large intestine *d. stomach*
42. Eupepsia means
a. deficient appetite *c. normal digestion*
b. excessive appetite *d. sluggish intestinal action*
43. Inflammation of her gums is
a. cheilitis *c. glossitis*
b. gingivitis *d. stomatitis*

44. The term for painful, burning urination is
a. diuresis *c. nephrolithiasis*
b. dysuria *d. voiding*
45. A condition in which there are degenerative but not inflammatory changes in the kidneys is called
a. catheterization *c. nephrosis*
b. nephritis *d. percutaneous nephrostomy*
46. Pus in the urine is called
a. albuminuria *c. pyuria*
b. hematuria *d. uremia*
47. Incision of the kidney to remove a calculus is called
a. nephrectomy *c. nephrotomy*
b. nephrolithotomy *d. nephrotripsy*
48. Removal of impurities from the blood is referred to as
a. diuresis *c. peritoneal dialysis*
b. hemodialysis *d. renal insufficiency*
49. Gestation means
a. after birth *c. childbirth*
b. before birth *d. pregnancy*
50. A woman who has had two live births is referred to as
a. nullipara *c. tripara*
b. secundipara *d. unipara*

Список рекомендованої літератури

5. Список рекомендованої літератури

Основна

1. ENGLISH FOR PROFESSIONAL PURPOSES. PHARMACY: Course book for 3rd year students of the Faculty of Pharmacy. – Одеса: ОНМедУ, 2023. – 196 с. (комп'ютерна верстка)
2. Збірник вправ по роботі з греко-латинськими елементами в англійській медичній термінології. - Одеса: ОНМедУ, 2023. – 20 с. (комп'ютерна верстка)
<https://info.odmu.edu.ua/chair/philosophy/fileinfo/816/183375>
3. Professional Medical English: Course book for higher education students, speciality 222 Medicine of higher educational institution institutions of IV level of accreditation / Rusalkina, L. H.; Mokriienko, E. M.; Lazor, N. V.; Bermas, O. M. - Odesa: ONMedU, 2023. - 256 с.

Додаткова:

1. Medical English for Academic Purposes, Ю.В. Лисанець, О.М.Беляєва, М.П. Мелащенко 2018, Видавництво Медицина. - 312 с.
2. Lippincott Illustrated Reviews: Pharmacology, Автор Karen Whalen Видавництво Lippincott Williams & Wilkins, 2018. - 576 с.
3. Medical Terminology. An Illustrated Guide. Barbara Janson Cohen, Shirley A.Jones. Ninth Edition. Jones and Bartlett Learning, 2021, - 670 p.
4. Raymond Murphy. English Grammar in Use. Cambridge University Press, 2019. – 380 p.
5. Sabluk A. H., Levandovska L.V. English for medical students. – BCB Medicine 2018. - 576 p.

Електронні інформаційні ресурси:

1. Одеський національний медичний університет: <https://onmedu.edu.ua/>
2. Інформаційні матеріали: <http://www.info.odmu.edu.ua>
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4. Longman Dictionary of Contemporary English
<https://www.ldoceonline.com/>
5. The International Medical Interpreters Association
<https://www.imiaweb.org/>
6. Free Online Term Extractors
<http://recremisi.blogspot.com/p/online-term-extractors.html>
7. Medical Dictionary Online
<https://www.online-medical-dictionary.org/>

Тема 2: ФАРМАЦЕВТИЧНА БОТАНІКА

Мета: ознайомити здобувачів вищої освіти з термінами пов'язаними з фармацевтичною ботанікою, які використовуються у медичній термінології

Основні поняття: фармацевтична ботаніка, англійська медична термінологія

I. План:

1. Перевірте, чи добре засвоїли інформацію теми:

Exercise 1. Answer the questions to the text.

1. What makes plants different from other eukaryotes?
2. What have plant cells retained of their prokaryotic ancestors?
3. What similar features does a plant cell share with a typical eukaryotic one?
4. What constituents doesn't a plant cell include compared to an animal one?
5. What are the unique plant cell structures?
6. What does a plant cell consist of?
7. Name the constituent parts of the protoplast.
8. How are plant cells interconnected?
9. How are plastids differentiated?
10. What function do chloroplasts provide?
11. Where are chromoplasts usually found?
12. How do they ensure flowers fertilization, fruits and seeds distribution?
13. What function are leucoplasts involved in?
14. What are the products of protoplast's life activities?
15. What ensures the cell osmotic pressure and turgor?

Exercise 2. Mark the following sentences as true (T) or false (F).

1. The plant cell wall is the living part of a plant.
2. The basic plant cell structure differs from the animal one considerably.
3. Cystolith is a star-shaped crystal formed inside the idioblast.
4. Chromoplasts are mainly of green colour.
5. Plant cells as well as fungi have the protective cell wall structure which is descended from prokaryotes.
6. Vitamin A biosynthesis occurs from chromoplasts containing a large amount of β -carotenes.
7. All the eukaryotes have got plasmodesmata.
8. The plant cell wall doesn't change during its life-cycle.

Exercise 3. Find the synonyms from the tests.

- petiole –
- bundle –
- kind –
- loop-shaped –
- protuberance –
- folded –
- notch –
- needle-shaped –
- to dye –
- embryonic root –

Exercise 4. Match the terms with their definitions.

1. Lenticel a) becoming woody through the formation and deposit of lignin in cell walls.
2. Stoma b) The plant tissue that has the mechanical function of supporting the plant
3. Lignification c) The conversion of cell walls into a material that repels water, when primary cell walls of epidermis are impregnated with cutin.
4. Suberization d) a body of cells formed on the periderm of a stem, appearing on the surface of the plant as a lens-shaped spot, and serving as a pore.
5. Cutinization e) a modified pore, especially on a leaf, which exudes drops of water.
6. Collenchyma f) a transport tissue found in the vascular bundles of higher plants and functions in the transport of dissolved organic substances.
7. Stoma g) one of the minute orifices or slits in the epidermis of leaves, stems, etc., through which gases are exchanged.
8. Suberin h) Deposition of suberin on the walls of plant cells, as in the formation of cork tissue.
9. Sclerenchyma i) intramolecular modification that results in mucus formation.
10. Phloem j) a plant tissue that consists of living usually elongated cells with unevenly thickened walls and acts as support especially in areas of primary growth.

Exercise 4. Fill in the types of inflorescence according their description.

Umbel, Thyrses, Raceme, Corymb, Capitulum, Spike, Panicle

- _____ - an elongate, unbranched, indeterminate inflorescence with sessile flowers.
- _____ - an elongate, unbranched, indeterminate inflorescence with pedicelled flowers.
- _____ - a branched raceme.
- _____ - a flat-topped raceme with elongate pedicels reaching the same level.
- _____ - a flat-topped or rounded inflorescence with the pedicels originating from a common point.
- _____ (or head) - a dense vertically compressed inflorescence with sessile flowers on a receptacle and subtended by an involucre of phyllaries, characteristic of the Asteraceae.
- _____ - a many-flowered inflorescence with an indeterminate central axis and many opposite, lateral dichasia; a mixed inflorescence, with determinate and indeterminate shoots.

2. Питання для самоконтролю (перелік питань):

1. What are the typical features of monocots' mature leaves?
2. What is the structure of the eudicots and magnoliids' typical leaf?
3. What kind of compound leaves do some species possess?
4. What are the main leaf venation types in angiosperms?
5. How do they differ?
6. How are the floral organs arranged?
7. What is the perianth? What types are they differentiated into?
8. What are the inner structures of a flower?
9. What is the pericarp and how it is divided?
10. In which fruits does the endocarp consist only of thin-walled succulent cells?
11. What type of corolla do the flowers of the Legume family possess?
12. What characteristics are typical for the plants of the Celery or Carrot Family?
13. What characteristics are typical for the plants of the Mint or Nettle Family?
14. What type of flowers don't representatives of Asteraceae family have?
15. What type of fruit has opium poppy got?

3. Завдання для самостійного опрацювання матеріалу:

Fill in the types of inflorescence according their description.

Umbel, Thyrses, Raceme, Corymb, Capitulum, Spike, Panicle

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<http://recremisi.blogspot.com/p/online-term-extractors.html>
7. Medical Dictionary Online
<https://www.online-medical-dictionary.org/>

Тема 3 : PATHOLOGICAL PHYSIOLOGY

Мета: ознайомити здобувачів вищої освіти з особливостями вживання та перекладу медичної термінології у пат.фізіології.

Основні поняття: емболізм, бляшка, тромбоз, некроз.

План:

1. Перевірте, чи добре засвоїли інформацію теми:

Exercise 1. Fill in the gaps.

Fat Embolism. Fat embolism usually follows () of bones and other type of () injury. After the injury, globules of fat frequently enter the circulation. Although traumatic fat embolism occurs usually it is as symptomatic in most cases and () is removed. But in some severe () the fat emboli may cause occlusion of pulmonary or () microvasculature and fat embolism syndrome may result. Fat embolism syndrome typically begins 1 to 3 days after injury during which the raised tissue pressure caused by swelling of damaged tissue () fat into marrow sinusoids and veins. The features of this () are a sudden onset of dyspnea, blood stained () , tachycardia, mental confusion with neurologic symptoms including irritability and () , sometimes progress to delirium and coma.

Fat, Restlessness, Injuries, Sputum, Forces, Cerebral, Syndrome, Tissue, Fracture

Exercise 2. Read the text and explain the terms.

Gas Embolism. Two main forms of gas embolism are air embolism and decompression sickness.

Air Embolism occurs when air is introduced into venous or arterial circulation.

Causes of venous embolism include: operations on head and neck, and trauma, obstetrical operations, intravenous infusion of blood and fluid, angiography. The effects of venous air embolism depend upon the following factors: amount of air usually 100-150 ml of air entry is considered fatal, rapidity, position of the patient during or soon after entry of air. The air bubbles may ascend into the superior vena cava if the position of head is higher than the trunk (e.g. in upright position) and reach the brain. General condition of the patient e.g. in severely ill patients, as little as 40 ml of air may have serious results.

Causes of arterial embolism include: cardiothoracic surgery and trauma, paradoxical air embolism, arteriography. The effects of arterial air embolism are certain characteristic features: marble skin due to blockage of cutaneous vessels, air bubbles in the retinal vessels seen ophthalmoscopically, pallor of the tongue due to occlusion of a branch of lingual artery, coronary or cerebral arterial air embolism may cause sudden death by much smaller amounts of air than in the venous air embolism.

Decompression Sickness. This is a specialized form of gas embolism known by various names such as caisson's disease, divers' palsy or aeroembolism. Decompression sickness is produced when the individual decompresses suddenly, either from high atmospheric pressure to normal level, or from normal pressure to low atmospheric pressure.

Gas Embolism	
Air embolism	
Decompression sickness	
Venous embolism	
Arterial embolism	

Exercise 3. Read the sentences carefully and find synonyms for the underlined words from the options provided. Choose the word that has a similar meaning to the underlined word in each sentence.

1. Two main forms of **gas embolism** are air embolism and decompression sickness.
 - a) Fluid obstruction
 - b) Air blockage
 - c) Gas occlusion
 - d) Vascular congestion
2. **Air Embolism** occurs when air is introduced into venous or arterial circulation.
 - a) Wind Occlusion
 - b) Breathing Blockage
 - c) Gas Entrapment
 - d) Ventilation Disorder
3. Causes of **venous embolism** include: operations on head and neck, and trauma, obstetrical operations, intravenous infusion of blood and fluid, angiography.
 - a) Vein congestion
 - b) Blood vessel blockage
 - c) Circulatory clog
 - d) Vascular occlusion
4. The effects of **venous air embolism** depend upon the following factors: amount of air usually 100-150 ml of air entry is considered fatal, rapidity, position of the patient during or soon after entry of air.
 - a) Oxygen bubble occlusion
 - b) Air bubble blockage
 - c) Respiratory embolism

d) Pulmonary congestion

5. Causes of **arterial embolism** include: cardiothoracic surgery and trauma, paradoxical air embolism, arteriography.

a) Blood vessel congestion

b) Artery blockage

c) Vascular occlusion

d) Capillary clog

Exercise 4. Read the sentences carefully and find antonyms (words with opposite meanings) for the underlined words from the options provided. Choose the word that has an opposite meaning to the underlined word in each sentence.

1. Amniotic Fluid Embolism. This is the most serious, predictable and preventable cause of maternal mortality.

Antonym for "unpredictable":

a) Foreseeable

b) Inevitable

c) Unavoidable

d) Certain

2. During labour and in the immediate post-partum period, the contents of amniotic fluid may enter the uterine veins and reach right side of the heart resulting in nonfatal complications.

Antonym for "fatal":

a) Deadly

b) Severe

c) Critical

d) Harmful

3. Notable changes are seen in the lungs such as hemorrhages, congestion, edema, and changes of ARDS, and contraction of right side of the heart.

Antonym for "contraction":

a) Expansion

b) Enlargement

c) Constriction

d) Reduction

4. These changes are associated with unidentifiable amniotic fluid contents within the pulmonary microcirculation.

Antonym for "identifiable":

- a) Recognizable
- b) Discernible
- c) Apparent
- d) Obscure

Exercise 5. Match terms with definitions.

Virchow's triad	in medical terms, refers to a state in which there is an excessive tendency for blood to clot. It is characterized by an imbalance in the body's normal coagulation (clotting) processes, leading to an increased risk of blood clot formation, which can potentially lead to conditions such as deep vein thrombosis, pulmonary embolism, or other thrombotic events.
Hypercoagulability	is a blood clot that forms within a blood vessel. It can obstruct the flow of blood and potentially lead to various medical complications, depending on its location and size.
Endothelial injury/dysfunction	in the medical context, refers to the slowing or stagnation of blood flow within a blood vessel. It is a condition where blood moves more slowly than normal, which can contribute to the activation of clotting factors and increase the risk of blood clot formation.
Thrombus	is a localized dilation or bulging of a blood vessel wall that is caused by a bacterial or fungal infection. It occurs when an infection weakens the vessel wall, leading to the formation of a weakened area that may enlarge and become susceptible to rupture.
Mycotic aneurysm	damage or impaired function of the inner lining (endothelium) of blood vessels. This condition can disrupt the normal regulation of blood flow, promote inflammation, and contribute to the formation of blood clots within the affected vessels.
Stasis	is a medical term that describes the sudden blockage of a blood vessel by a material that travels through the bloodstream and becomes lodged in a vessel, obstructing blood flow. This material, known as an embolus, can be solid, liquid, or gaseous, and it can lead to various complications depending on where it becomes lodged and the size of the vessel affected.
Thromboembolism	is a concept in medicine that describes the three main factors that contribute to the development of thrombosis, which is the formation of blood clots within blood vessels.

Embolism	refers to the process where an embolus, which is a material such as a blood clot or debris, becomes lodged in a smaller branch of an artery known as an arteriole. This can disrupt blood flow to the tissue supplied by the arteriole, potentially leading to tissue damage, ischemia, or other related complications.
Arteriolar embolization	is a medical term that refers to the formation of a blood clot (thrombus) in one location of the body, which then breaks free and travels through the bloodstream to block a blood vessel in another location. This can lead to restricted blood flow, tissue damage, and potentially serious health consequences depending on where the embolism lodges.

2. Завдання для самоконтролю:

Match words to their definitions

Metoprolol	it is flat with depressed ridges along the sides where the costal cartilages of the 3rd to 7th pairs of ribs articulate inferior to the sternal angle.
Contraindications	term that is often used in healthcare to indicate that something is benign.
Jaw	a feeling of sickness or discomfort in the stomach that may come with an urge to vomit.
Sternum	a medication that lowers your blood pressure and heart rate, making it easier for your heart to pump blood to the rest of your body. It treats high blood pressure. It also prevents chest pain or further damage after a heart attack.
Nauseated	blockage of a passageway.
Cannulae	the movable junction of the bones below the mouth (the mandible) and the bone just above the mouth (the maxilla).
Stable	specific situation in which a drug, procedure, or surgery should not be used because it may be harmful to the person.
Obstruction	the middle muscular layer of the wall of the heart.
Myocardium	good physical health, with no acute or chronic health problems for which medical treatment beyond routine medical care is required
Unremarkable	a thin tube that doctors insert into a person's body cavity, such as their nose, or into a vein.

3. Завдання для самостійного опрацювання матеріалу:

Read, translate and make deferential diagnoses. Say what analyses would you need to make a correct diagnosis. Give definitions to the terms

Julie Mackenzie is a 3 year old little girl who's brought to you because of a cough and flu-like symptoms. Her aunt is the one with her today because Julie's parents are on a week's vacation. They have given permission for medical care as needed. Julie and her aunt are waiting for you in the examining room.

Cough: It's worse when she first gets up of a morning.

Kind of a "hack," and it's non-productive (no sputum).

Neither parent smokes.

Her aunt doesn't smoke.

Julie is on no medication.

She's been to daycare this week, but no one there is sick.

Julie lives in a 4 year old house, and most of it is carpeted.

The family owns a cat.

Julie's parents are on a short Caribbean cruise, and have been gone three days.

Exam: Julie is a well nourished little girl having appropriate physical development for three years of age. She is appropriately curious but doesn't want to be separated from her aunt.

Vital signs:

T = 99.2

P = 88 and regular

BP = 122/74 mmHg

R = 18 and regular

Mildly reddened pharynx with slight **post nasal drainage**.

Mildly enlarged tonsils.

Ear drums clear with no fluid

No significant cervical lymph **adenopathy**.

Mild **wheezing** over both lung fields

Heart sounds normal, no **murmurs**.

No **abdominal masses**

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Тема: BIOCHEMISTRY

Мета: ознайомити здобувачів вищої освіти з ферментами, вітамінами та мінералами англійською мовою; медичними термінами, що стосуються біологічної хімії: їх переклад, особливості словотворення, аналіз елементів греко-латинського походження..

Основні поняття: біологічна хімія, білки, ферменти.

План:

II. Перевірте, як ви засвоїли тему

Exercise 1. Remember roots and suffixes pertaining to biochemistry.

Root/Suffix	Meaning	Example
cyto-	cell	cytology
lipo-	fat	adipocellular
glyco-	sugar	glycolipid, glucose
iso-	equal, similar	isoenzyme
poli-	multiple	polysaccharides
-ine	relating to, made of	glycine, lysine
-lysis	decomposition, breaking down	glycolysis, electrolysis
-cyte	cell	erythrocyte

Exercise 2. Read the definitions and choose the proper term given in brackets.

- _____ is the splitting of glycogen in the liver and muscles to pyruvate and lactate in anaerobic conditions with the formation of ATP.
- _____ is the splitting of glucose to pyruvate and lactate.
- _____ is the synthesis of glycogen from glucose in the liver and muscles.
- _____ is the formation of glucose from non-carbohydrate nature of substances.
- _____ is produced by the hydrolysis in the intestine disaccharide - lactose.
- _____ is the process of resynthesis of glucose from non-carbohydrate natural products.
- _____ is formed in almost all cells of the organism, but the highest concentration detected in the liver.
- _____ is used for the biosynthesis of triglycerides and phospholipids.

(*Gluconeogenesis, Glycogenesis, glycogenolysis, glycerol phosphate, galactose, glycolysis, glycogen, gluconeogenesis*)

Exercise 3. Find synonyms in the text to the following words and word combinations.

Dissoluble, elementary, compound, to consist of, deposit, infuse, to form clots, combine, resistance, iron-containing protein, alternative to, transmit, disintegration, convertible, suppression, characteristic, to cause, watered, to equate with, to give in, warming up.

Exercise 4. Match the terms with their definition.

1. Keratin	a) is the iron-containing oxygen-transport metalloprotein in the red blood cells;
2. Collagen	b) is a phosphoprotein found in milk and egg yolk;
3. Gelatine	c) is a characteristic constituent of epidermal tissue, such as horn, hair, nails, wool, hoofs and feathers;
4. Elastin	d) a specific protein that acts as biological catalysts;
5. Haemoglobin	e) it is not a complete protein as it lacks an amino acid tryptophan and forms a gel on cooling;
6. Casein	f) can be easily converted to gelatine by boiling and splitting off some amino

	acids;
7. Enzyme	g) it presents in yellow elastic fibre of the connective tissue, ligaments, and tendons. It is formed in large amount in the uterus during pregnancy.

Exercise 5. Match the beginnings and endings of the sentences.

Monosaccharides are classified according to	an inability to convert galactose to glucose.
Carbohydrates are associated with the outer parts of the molecules of membrane proteins and lipids	anaerobic conditions, or when the metabolic machinery is absent for the further oxidation of pyruvate.
Galactosemia is a genetic disease characterized by	the chemical nature of their carbonyl group and the number of their C atoms.
Symptoms of galactosemia include	activity as the glucose concentration rises in diabetes.
The sorbitol pathway is responsible for fructose formation from glucose, and increases in	two molecules of pyruvate with the concomitant new generation of two ATPs.
Glycolysis is the metabolic pathway by which most life forms degrade glucose to	the liver in the period between the consumption of food.
Lactate is the end product of glycolysis under	to form glycoproteins and glycolipids.
Glucagon provides sufficient output of glucose from	failure to thrive, mental retardation, and in some instances death from liver damage.

Exercise 6. Say whether the following statements are true or false.

1. Cellulose, which is a part of the food, isn't digested by enzymes of saliva and small intestine.
2. Digestion of proteins in the stomach lasts for 6-8 hours.
3. Pepsin is produced by cells of intestinal mucosa.
4. Hypovitaminosis of vitamin C causes gout.
5. Organ rich in vitamin B12 is pancreas.
6. Hypovitaminosis of vitamin B12 is pernicious anaemia.
7. Toxicity of high doses of folic acid is the same as in other B group vitamins.
8. Hypovitaminosis of vitamin B1 leads to the beriberi disease.

2. Питання для самоконтролю (перелік питань):

1. What is a macromolecule?
2. What do complex proteins contain?
3. How are proteins classified?
4. How are amino acids divided according to the chemical structure?
5. What is the division of proteins according to the solubility and functional properties?
6. What are the major subclasses of simple proteins?
7. Name the properties of globulins.
8. What are the properties of gliadins?
9. What proteins form conjugated proteins with DNA and porphyrins?
10. What proteins combine with nucleic acids to form nucleoproteins?
11. What group of simple proteins do keratins, collagen and elastins belong to?
12. What are conjugated proteins?
13. What conjugated protein is abundant in tissues and can be found in thymus and glandular organs?
14. What metallic elements do some enzymes contain?
15. What is enzyme?
16. How are enzymes divided according to their chemical reactions?
17. What are the isozymes?
18. What are the types of inhibition of enzymes?

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Remember roots and suffixes pertaining to biochemistry.

Root/Suffix	Meaning	Example
cyto-	cell	cytology
lipo-	fat	adipocellular
glyco-	sugar	glycolipid, glucose
iso-	equal, similar	isoenzyme
poli-	multiple	polysaccharides
-ine	relating to, made of	glycine, lysine
-lysis	decomposition, breaking down	glycolysis, electrolysis
-cyte	cell	erythrocyte

Exercise 2. Match terms with definitions

Diabetes mellitus	1. extremely lethargic or sleepy.
Uneventful	2. the chemical processes that occur within a living organism in order to maintain life.
Comatose	3. a hormone produced in the pancreas by the islets of Langerhans, which regulates the amount of glucose in the blood. The lack of insulin causes a form of diabetes.
Oxidation	4. be developing an infectious disease before symptoms appear.
Insulin	5. a disease of inadequate control of blood levels of glucose.
Protein	6. A molecule that contains two or more amino acids (the molecules that join together to form proteins).
Metabolism	7. A chemical reaction that takes place when a substance comes into contact with oxygen or another oxidizing substance.
Incubating	8. any of a class of nitrogenous organic compounds that have large molecules composed of one or more long chains of amino acids and are an essential part of all living organisms, especially as structural components of body tissues such as muscle, hair, etc., and as enzymes and antibodies.
Peptide	9. not marked by interesting or exciting events.

4. Тестові завдання для самоконтролю:

1. Pain along large nervous stems and increased amount of pyruvate in the blood were revealed in the patient. Insufficiency of what vitamin can cause such change?

A B1

B B2

C PP

D Pantothenic acid

E Biotin

2. In case of enterobiasis acrihine - the structural analogue of vitamin B2 - is administered. The synthesis disorder of which enzymes does this medicine cause in microorganisms?

- A FAD-dependent dehydrogenase
- B Cytochrome oxidases
- C Peptidases
- D NAD-dependent dehydrogenases
- E Aminotransferases

3. A 10-year-old girl often experiences acute respiratory infections with multiple spotty haemorrhages in the places of clothes friction. Hypovitaminosis of what vitamin is present at the girl?

- A C
- B B6
- C B1
- D A
- E B2

4. There is observed inhibited fibrillation in the patients with bile ducts obstruction, bleeding due to low level of absorption of some vitamin. What vitamin is in deficit?

- A K
- B A
- C D
- D E
- E Carotene

5. During endotoxemia active forms of the oxygen including superoxide anion radical are formed in the human body. With help of what enzyme is this anion activated?

- A Superoxide dismutase
- B Catalase
- C Peroxidase
- D Glutathione peroxidase
- E Glutathione reductase

6. A patient presents high activity of LDH1,2, aspartate aminotransferase, creatine phosphokinase. In what organ (organs) is the development of a pathological process the most probable?

- A In the heart muscle (initial stage of myocardium infarction)
- B In skeletal muscles (dystrophy, atrophy)
- C In kidneys and adrenals
- D In connective tissue
- E In liver and kidneys

7. While examining the child the doctor revealed symmetric cheeks roughness, diarrhoea, disfunction of the nervous system. Lack of what food components caused it?

- A Nicotinic acid, tryptophan
- B Lysine, ascorbic acid
- C Threonine, pantothenic acid
- D Methionine, lipoic acid
- E Phenylalanine, pangamic acid

8. A 13-year-old boy complains of general weakness, dizziness, tiredness. He is mentally retarded. Increased level of valine, isoleucine, leucine is in the blood and urine. Urine has specific smell. What is the diagnosis?
- A Maple syrup urine disease
 - B Addison's disease
 - C Tyrosinosis
 - D Histidinemia
 - E Graves' disease
9. Aspirin has anti-inflammatory effect due to inhibition of the cyclooxygenase activity. Level of what biological active acids will decrease?
- A Prostaglandins
 - B Leukotrienes
 - C Catecholamines
 - D Biogenic amines
 - E Iodothyronines
10. Examination of a patient revealed typical presentations of collagenases. This pathology is characterized by increase of the following urine index:
- A Hydroxyproline
 - B Arginine
 - C Glucose
 - D Mineral salts
 - E Ammonium salts

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Тема 5: ANALITICAL CHEMISTRY

Мета: розширення, поглиблення й деталізація наукової термінології з аналітичної хімії, формування мовленнєвих компетентностей, розвиток наукового мислення та усного мовлення здобувачів вищої освіти.

Основні поняття: аналітична хімія, хімічна реакція, хімічні елементи, хімічні сполуки

План:

1. Теоретичні питання

1. What is an analytical reaction?
2. What methods do allow to determine the composition of a substance without resorting to the use of chemical reactions?
3. What is investigated in spectral analysis?
4. What methods of analysis are based on the study of physical phenomena that occur during chemical reactions?
5. What can you tell about colorimetry?
6. What can you tell about conductometry?
7. What methods of qualitative analysis are distinguished depending on the amount of substance when performing analytical reactions?
8. What reactions are used in drip method?
9. What can you tell about semi-microanalysis?
10. What can you tell about ultramicroanalysis?

Exercise 1. Match the terms with their definitions.

Звернути увагу здобувачів на ключові слова, за якими можна швидко знайти правильний відповідник

1. Electrolytes	a) are in aqueous solutions dissociate only partially, and a dynamic equilibrium is established in the solution between undissociated molecules and ions.
2. Cations	b) are negatively charged ions
3. Anions	c) are positively charged ions
4. Strong electrolytes	d) is detection or "discovery" of individual elements or ions that are part of substances
5. Weak electrolytes	e) are substances that decompose in solutions or melts into ions
6. Salt effect	e) is determination of the quantitative content of individual components of the test substance.
7. Protolytic equilibrium	f) is equilibrium constant corresponding to the dissociation of a weak electrolyte
8. Qualitative analysis	g) are in aqueous solutions are dissociated almost completely
9. Quantitative analysis	h) is called increasing the solubility of salts in the system "sediment-solution" when adding to the system of other strong electrolytes.
10. Dissociation constant	i) is equilibrium in which the proton - hydrogen ion H^+

	participates
--	--------------

Exercise 2. Say whether the following statements are true or false.

- 1) In this regard, electrolytes can be divided into two groups - strong and weak electrolytes.
- 2) The dynamic equilibrium between undissociated molecules and ions is subject to the law of passive masses.
- 3) The value of CD depends on the nature of the electrolyte, the nature of the solvent.
- 4) Strong electrolytes when dissolved in water completely dissociate into ions - the process of their dissociation is irreversible ($\alpha = 1$ or 100%).
- 5) Ion pairs (ion associates), in contrast to molecules, retain ion charges, and the distance between ions isn't greater than the interatomic distance in molecules and ionic crystals

- 6) All chemical reactions can be divided into reversible and irreversible reactions.

- 7) The precipitation of sparingly soluble compounds with the joint reagent occurs stepwise.
- 8) The processes of ionization and dissociation of substances in solutions aren't explained by the interaction of the solute with solvent molecules.
- 9) In solutions of weak acids it is necessary to consider that all acid molecules break down into ions.
- 10) Buffer solutions are solutions that are able to maintain a constant pH value when adding small amounts of acids or bases, as well as when diluting them with water.

- 11) The minimum buffer capacity is observed in such solutions, which contain equal concentrations of weak acid and its salt or weak base and its salt.
- 12) The drip method uses reactions that are accompanied by a change in the color and smell of the solution or the formation of colored precipitation.

- 13) Analytical reactions can be performed "dry" and "wet".

2. Завдання для самоконтролю:

Read the definitions and choose the proper term given in brackets:

amide; colorimetry; evaporation; permanganatometry; qualitative analysis; quantitative analysis; titration end point; titrimetric method
--

1. The titration end point – the point during a titration when an indicator shows that the amount of reactant necessary for a complete reaction has been added to a solution.
2. Amide, any member of either of two classes of nitrogen-containing compounds related to ammonia and amines.
3. The qualitative analysis – the detection or "discovery" of individual elements or ions that are part of substances.
4. Evaporation is the process of a substance in a liquid state changing to a gaseous state due to an increase in temperature and/or pressure.
5. Colorimetry – uses the phenomenon of discoloration of the solution during chemical reactions.
6. Titrimetric method is a method of quantitative analysis based on the measurement of the volume of a solution with a precisely known concentration of a reagent (the titrant) required for reaction with a given amount of a substance being determined (the analyte).
7. Permanganatometry is a redox titration that involves the use of permanganates to measure the amount of analyte present in unknown chemical samples.
8. The quantitative analysis – determination of the quantitative content of individual components of the test substance.

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Find synonyms of the following words in the tests:

Необхідно звернути увагу здобувачів на необхідність морфологічної відповідності синонімів

vanish	<i>disappear</i>	next	<i>following</i>
carry out	<i>perform</i>	plus point	<i>advantage</i>
demand	<i>require</i>	show	<i>indicate</i>
occur	<i>appear</i>	research	<i>investigation</i>

Exercise 2. Fill the table with the missing parts of speech:

verb	noun	adjective	adverb
<i>ease</i>	<i>easiness</i>	<i>easy</i>	<i>easily</i>
<i>direct</i>	<i>direction</i>	<i>direct</i>	<i>directly</i>
<i>present</i>	<i>presence</i>	<i>present</i>	<i>presently</i>
<i>indicate</i>	<i>indication, indicator</i>	<i>indicative</i>	<i>indicatively</i>
<i>require</i>	<i>requirement</i>	<i>required</i>	
<i>vary</i>	<i>variety</i>	<i>various</i>	<i>variously</i>
<i>perform</i>	<i>performance</i>	<i>performing</i>	
<i>include</i>	<i>inclusion</i>	<i>inclusive</i>	<i>inclusively</i>
<i>follow</i>	<i>follower</i>	<i>following</i>	

Exercise 3. Read the definitions and choose the proper term given in brackets:

amide; colorimetry; evaporation; permanganatometry; qualitative analysis; quantitative analysis; titration end point; titrimetric method

9. The titration end point – the point during a titration when an indicator shows that the amount of reactant necessary for a complete reaction has been added to a solution.
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11. The qualitative analysis – the detection or "discovery" of individual elements or ions that are part of substances.
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15. Permanganatometry is a redox titration that involves the use of permanganates to measure the amount of analyte present in unknown chemical samples.
16. The quantitative analysis – determination of the quantitative content of individual components of the test substance.

4. Тестові завдання для самоконтролю:

Виділіть ключові слова тестів

1. What titrimetric method of analysis requires the use of both external and internal indicators?
A. Nitritometry
B. Alkalimetry
C. Complexometric titration
D. Permanganatometry
E. Argentometry

2. By means of photoelectrocolorimetric analysis the concentration of the following can be determined:
- Colored solution
 - Turbid solution
 - Optically active substance
 - Colorless solution
 - Any type of solution
3. To determine qualitative content of a drug, the drug sample was processed with 2M solution of HCl. White precipitate soluble in aqueous ammonia solution was formed. This analytical effect indicates the presence of the following cations:
- Silver(I)
 - Lead(II)
 - Mercury(I)
 - Mercury(II)
 - Tin(II)
4. In photometric analysis the series of 6-8 standard solutions is used:
- To build a calibration curve
 - To assess determination method
 - To simplify working method
 - To choose cuvettes
 - To choose optical filter
5. Ammonium iron(III) sulfate can be used as an indicator in:
- Argentometry, Volhard method
 - Argentometry, Mohr method
 - Alkalimetry
 - Acidimetry
 - Complexometric titration
6. Quantitative content of oxalic acid can be determined by means of permanganatometry. How to determine equivalence point for this kind of titration?
- When titrate changes its color after another drop of process solution is added
 - With redox indicator diphenylamine
 - With pH indicator
 - With specific indicator
 - With adsorption indicator
7. Specify what method of redox titration requires the use of specific indicator – starch – to fix the end point:
- Iodometry
 - Permanganatometry
 - Nitritometry
 - Cerimetry
 - Bromatometry
8. What solution can be used to determine the presence of chloride ions in the potable water?
- Silver nitrate
 - Iodine
 - Potassium bromate
 - Sodium hydroxide
 - Ammonia
9. A specialist of the analytical laboratory performs direct iodometric determination of ascorbic acid. What indicator is used in this case?
- Starch
 - Methyl orange

- C. Diphenylamine
 - D. Phenolphthalein
 - E. Methyl red
10. What indicator is used for fixing the endpoint of mercurimetric titration?
- A. Thiocyanate complexes of iron(III)
 - B. Fluorescein
 - C. Eosin
 - D. Murexide
 - E. Potassium chromate

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Тема 6: ORGANIC CHEMISTRY-

Мета: розширення, поглиблення й деталізація наукової термінології з аналітичної хімії, формування мовленнєвих компетентностей, розвиток наукового мислення та усного мовлення здобувачів вищої освіти.

Основні поняття: органічна хімія, хімічна реакція, хімічні елементи, органічні і неорганічні хімічні сполуки

План:

1. Теоретичні питання:

1. What are alkanes?
2. Name four members of the homologous series.
3. What are physical and chemical properties?
4. Oxidation is used in industry to produce what?
5. What is used to produce high-octane gasoline, unsaturated and aromatic hydrocarbons.
6. What are examples of catalysts?
7. How the natural gas is separated?
8. What is the general formula of alkanes?

Exercise 1. Match the words to make word combinations

catalytic	importance
commercial	series
produce	distillation
normal	configuration
fractional	methanol
homologous	cracking
tetrahedral	mixture
complex	conditions

Exercise 2. Fill in the text to make definitions.

Organic chemistry is a branch of chemistry that studies the structure, properties and reactions of organic _____, which contain carbon-carbon covalent bonds. Study of structure determines their structural formula. Study of properties _____ physical and chemical _____, and evaluation of chemical reactivity to understand their behavior. The study of organic reactions includes the chemical _____ of natural products, drugs, and polymers, and study of individual organic _____ in the laboratory and via theoretical (in silico) study.

In organic chemistry, an **alkane**, or paraffin (a historical trivial name that also has other meanings), is an acyclic saturated _____. In other words, an alkane consists of _____ and carbon atoms _____ in a tree structure in which all the carbon-carbon _____ are single. Alkanes have the general chemical formula

Carbon (from Latin: carbo "coal") is a chemical element with the symbol C and atomic number 6. It is nonmetallic and tetravalent—its atom making four _____ available to form covalent chemical bonds. It belongs to group 14 of the periodic table. Carbon makes up only about 0.025 percent of Earth's crust. Three _____ occur naturally, ¹²C and ¹³C being stable, while ¹⁴C is a radionuclide, decaying with a half-life of about 5,730 years. Carbon is one of the few _____ known since antiquity.

Includes, arranged, synthesis, molecules, elements, electrons, properties, compounds, hydrogen, hydrocarbon, bonds, isotopes

2. Питання для самоконтролю (перелік питань):

Put questions to sentences below

1. In the large intestine, microorganisms synthesize vitamins that participate in the body's biochemical processes.
2. Epinephrine is used to prolong the effect of novocaine during anesthesia.
3. Natural peptides can perform various functions.
4. Hormone-like compounds are used to stimulate childbirth and for contraception.
5. Tetanic spasms of skeletal muscles occur with a low concentration of calcium in the blood.
6. The child's parents made an appointment with an endocrinologist because of complaints about the child's short stature.
7. A certain staining method is used to identify capsular bacteria.
8. The patient was brought to the hospital with iron deficiency anemia.
9. The student analyzes the plant organ that provides nutrition, vegetative reproduction and anchoring of plants in the soil.
10. Students should point out the features of oxidation.

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Match the terms with their definitions.

1. Reduction	j) is a chemical reaction in which two molecules come together to make a bigger one.
2. Addition	k) is a process that leads to the chemical transformation of one set of chemical substances to another.
3. Hydroliss	l) is a chemical reaction that involves the gaining of electrons by one of the atoms involved in the reaction between two chemicals.
4. Chemical reaction	m) is a chemical reaction that involves the loss of electrons.
5. Chemical bond	n) is a chemical reaction in which one group replaces the other.
6. Rearrangement	o) is any chemical reaction in which a molecule of water ruptures one or more chemical bonds.
7. Oxidation	p) is a chemical reaction in which an atom or group migrates from one carbon atom to another.
8. Substitution	q) is a lasting attraction between atoms, ions or molecules that enables the formation of chemical compounds.

Тестові завдання для самоконтролю:

Translate the tests.

1. Calculation of chemical reactions thermal effects at pharmaceutical production is based on the Hess law, stating that reaction thermal effect is determined by:
 - A. Initial and final state of system
 - B. Mechanism by which the chemical change occurs
 - C. Route by which the chemical change occurs
 - D. Number of intermediate stages
 - E. Process duration

2. Dobutamine has been administered to the 49-year-old-patient with acute cardiac failure and cardiac glycoside intolerance. What is this drug's mechanism of action?
- Stimulation of β_1 -adrenoreceptors
 - Stimulation of α_1 -adrenoreceptors
 - Blockade of K^+ -, Na^+ - adenosinetrip hosphatase
 - Suppression of phosphodiesterase activity
 - Stimulation of *M*-cholinergic receptors
3. During calculous cholecystitis attack the patient has developed the following symptoms: saponated feces and steatorrhea. What stage of fats metabolism is disrupted according to those symptoms?
- Fat digestion, absorption and secretion
 - Fat absorption
 - Intermediary metabolism of fats
 - Fats metabolism in adipose tissue
 - Depositing disruption
4. If aromatic secretory-downy plant has square in cross section stem, spike inflorescence made up from whorled dichasia, bilabiate corolla and its fruit consists of four nutlets, it probably belongs to the following family:
- Lamiaceae*
 - Scrofulariaceae*
 - Brassicaceae*
 - Apiaceae*
 - Solanaceae*
5. When root is studied under microscope, one leading bundle is detected in its maturation zone, where xylem and phloem areas interchange radially. It can be concluded that this bundle type is:
- Radial
 - Collateral
 - Bicollateral
 - Amphicribal
 - Amphivasal
6. In large intestine microorganisms synthesize vitamins that participate in organism's biochemical processes. What vitamins are mainly synthesized by microflora?
- K, B₁₂*
 - A, C*
 - E, PP*
 - B₁, B₂*
 - B₆, E*
7. Parents of the 10-year-old child have made an appointment with endocrinologist due to complaints of child's low height. The child's appearance is corresponding with that of 5-year-old child. What hormone secretion disorder causes such physical development changes?
- Somatotropic hormone

- B.** Adrenocorticotrophic hormone
 - C.** Thyroxin
 - D.** Testosterone
 - E.** Insulin
8. The 55-year-old patient has been hospitalized due to chronic cardiac failure. Objectively: skin and mucosa are cyanotic, tachycardia, tachypnea. What kind of hypoxia does the patient have?
- A.** Circulatory
 - B.** Anemic
 - C.** Hemic
 - D.** Tissue
 - E.** Hypoxic
9. The patient has been hospitalized with pneumonia. What kind of respiratory failure does the patient have?
- A.** Restrictive
 - B.** Obstructive
 - C.** Central
 - D.** Peripheral
 - E.** Thoracicdiaphragm
10. What naloxone indications are there?
- A.** Narcotic analgetics acute poisoning
 - B.** Heavy metals poisoning
 - C.** Cardiac glycosides poisoning
 - D.** Ergot alkaloids poisoning
 - E.** Atropine sulphate poisoning

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Тема 7: PHYSICAL AND COLLOIDAL CHEMISTRY

Мета: розширення, поглиблення й деталізація наукової термінології з аналітичної хімії, формування мовленнєвих компетентностей, розвиток наукового мислення та усного мовлення здобувачів вищої освіти.

Основні поняття: аналітична хімія, хімічна реакція, хімічні елементи, хімічні сполуки

План:

1. Перевірте засвоєння базової лексики теми:

Exercise 1. Active Vocabulary

Noun	Verb	Adjective	Adverb
amount	belong to	concerted	extremely
calculation	differ	dispensing	freshly
constant	equal	disperse	numerically
degree	extract	high	towards
duration	refine	initial	widely
production	state	mutual	
rate	treat	rare	
route		thermal	
scattering			
solvent			
stage			
wetting			

Exercise 3. Find synonyms of the following words in the tests:

influence		increase in size	
transform		need	
to experience something		purify	
be a part of		get	
Happen		remove	

2. Завдання для самоконтролю :

Exercise 5. Read the definitions and choose the proper term given in brackets:

Chromatography; extraction; inoculation; monosaccharide; nutrient medium; ph scale; polynucleotide; sedimentation.

1. _____ – a substance, either solid or liquid, used for the cultivation, isolation, identification, or storage of microorganisms.
2. _____ – a biopolymer comprised of a long, linear series of nucleotides joined together by ester linkages between the phosphoryl group of nucleotide and the hydroxyl group of the sugar component of the next nucleotide.
3. _____ – the act of introducing microorganism or suspension of microorganisms (e.g. bacteria) into a culture medium.

4. _____ – the range of values from 0 to 14 that describes the acidity or basicity of a solution.
5. _____ is a separation process consisting in the separation of a substance from a matrix.
6. _____ – technique of separating molecules or components in a mixture according to the differential absorption and elution.
7. _____ – the deposition of suspended matter carried by water, wastewater, or other liquids, by gravity.
8. _____ – a carbohydrate that does not hydrolyze, as glucose, fructose, or ribose, occurring naturally or obtained by the hydrolysis of glycosides or polysaccharides.

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Fill the table with the missing parts of speech:

Noun	Verb	Adjective
Extraction		
Reduction		
Research		
Solvent		
Wetting		
Removal		
protection		
Point		

Exercise 2. Read the definitions and choose the proper term given in brackets:

Coagulation; colloid; dialysis; flocculation; potentiometric titration; *reaction rate*; surfactant; syneresis.

1. _____ – the speed at which reactants are converted into products in a chemical reaction.
2. _____ – a surface-active substance, such as a detergent or soap, that lowers the surface tension of a solvent (usually water).
3. _____ – the clumping of particles in order to settle out impurities; often induced by chemicals such as lime or alum.
4. _____ – the process of separating suspended solids from wastewater by chemical creation of a coagulated or flocculent masses.
5. _____ is a phase separated mixture in which one substance of microscopically dispersed insoluble or soluble particles is suspended throughout another substance.
6. _____ is a volumetric method in which the potential between two electrodes is measured (referent and indicator electrode) as a function of the added reagent volume.
7. _____ is the process of separating molecules in solution by the difference in their rates of diffusion through a semipermeable membrane.
8. _____ – the contraction of a gel accompanied by the exudation of liquid.

Exercise 3. Complete the abstract using the words and phrases below.

Colloidal; gel; mechanical; network; physically; polymer; precipitates; solvated .

_____ particles are usually _____, often to the extent of about one molecular layer, and this tightly bound solvent must be treated as a part of the particle. Sometimes much greater amounts of solvent can be immobilised by _____ entrapment within particle

aggregates. This occurs when voluminous flocculent hydroxide _____ are formed. In solutions of long thread-like molecules the _____ chains may cross-link, chemically or _____, and/or become mechanically entangled to such an extent that a continuous three-dimensional network is formed. If all of the solvent becomes mechanically trapped and immobilised within this _____, the system as a whole takes on a solid appearance and is called a _____.

Тестові завдання для самоконтролю

Translate the tests:

1. Calculation of chemical reactions thermal effects at pharmaceutical production is based on the Hess law, stating that reaction thermal effect is determined by:
A. Initial and final state of system
B. Mechanism by which the chemical change occurs
C. Route by which the chemical change occurs
D. Number of intermediate stages
E. Process duration
2. Research of reaction rate dependence on various factors allows intensification of technological processes. What factor **HAS NO** effect on the reaction rate constant?
A. Reacting agents concentration B. Temperature C. Reagents nature
D. Solvent nature E. Solid substance dispersion degree
3. Potentiometric method of pH measuring is used during pharmaceutical substances research. What electrode can be used as indicator (working electrode) in solution pH measuring?
A. Glass B. Standard hydrogen C. Zinc D. Calomel E. Silver-chlorine
4. Water solution of CaCl_2 with 10% mass concentration is used for intravenous injections. What is the maximum value of CaCl_2 isotonic coefficient in water solution?
A. 3 B. 4 C. 2 D. 5 E. 1
5. Pharmaceutical synthesis requires studying complex reaction kinetics. If the first stage product is the second stage initial substance, then such reaction is called:
A. Consecutive B. Inverse C. Concerted D. Second order E. Parallel
6. Reaction rate constant numerically equals the reaction rate, if molar concentrations of:
A. All reagents equal to 1 B. Reagents differ by 1 C. Products are identical
D. Products differ by 1 E. -
7. In potentiometric titration the following indicator electrode is used for chloride and borate acids quantitative determination in their mixture:
A. Glass B. Silver-chlorine C. Silver D. Platinum E. Calomel
8. In pharmaceutical production oxyethylated derivatives of fatty acid esters (FAEs) are used. They undergo colloid dissolution in sufficiently concentrated solutions. This process is called:
A. Solubilization B. Sensitization C. Synergism D. Colloid protection E. Syneresis
9. The dispensing chemist has been studying properties of certain disperse system classes, namely, aerosols. What optical phenomenon is characteristic of this disperse system class?
A. Light scattering B. Light absorption C. Opalescence D. Light reflection E. Light refraction
10. Selective solvents are used in laboratories and factories to isolate and refine essential oils, alkaloids, antibiotics and other pharmaceutical substances. This process is called:

A. Extraction B. Sedimentation C. Coagulation D. Flocculation E. Flotation

11. When liquid dosage forms are produced, colloid surfactants are added to increase certain components solubility. What physicochemical phenomenon is this process based on?

A. Solubilization B. Coagulation C. Extraction D. Diffusion E. Sedimentation

12. A pharmacist has been adding several small portions of electrolyte to silver chloride sol, which resulted in coagulation occurring at a higher electrolyte concentration than that occurring at adding same electrolyte by a single portion. This phenomenon is called:

A. Sol acclimatization B. Antagonism C. Synergism D. Additivity E. Desensitization

13. If an amount of high-molecular substance added to the given sol is extremely small, it is possible that its stability decreases instead of increase. What is this phenomenon called?

A. Sensitization B. Solubilization C. Syneresis D. Sedimentation E. Synergism

14. A method of removal of low-molecular impurities from the colloidal systems and high-molecular compound solutions by the diffusion through semi-permeable membrane is called:

A. Dialysis B. Electrodialysis C. Ultrafiltration D. Decantation E. Compensatory dialysis

15. Which aqueous solutions of the drugs having same molarity will be characterized by the highest boiling temperature:

A. Sodium sulfate B. Promedol (Trimeperidine) C. Nicotinamide D. Resorcin E. Iodine

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Тема 8: MICROBIOLOGY

Мета: ознайомити здобувачів вищої освіти з медичними термінами, що стосуються мікробіології: їх переклад, особливості словотворення, аналіз елементів греко-латинського походження; визначення холери, критичний аналіз її етіології, патогенезу, діагностики, лікування та заходів з запобігання ускладнень англійською мовою.

Основні поняття: мікробіологія, холера.

План:

1. Теоретичні питання:

5. What kinds of subcellular infectious entities are there?
6. What group of diseases can prions cause?
7. What does the abbreviation *TSE* mean?
8. What are viruses characterized by?
9. How do eukaryotes and prokaryotes differ in their nuclear structure?
10. What is the difference between the cytoplasm of eukaryotes and that of prokaryotes?
11. How do eukaryotes and prokaryotes reproduce?
12. What are the main groups of bacteria?
13. What are *Classic bacteria* characterized by?
14. What is *Chlamydia* characterized by?
15. What is *Rickettsia* characterized by?
16. What are *Mycoplasmas* characterized by?
17. Which microorganisms have no photosynthetic pigments and are carbon heterotrophic?
18. What are the morphological features of *Protozoa*?
19. What human pathogens belong to the animal kingdom?
20. Which types of helminths are medically significant?
21. What does host non-specific defence mechanism include?
22. What are specific immune responses based on?
23. What do *pathogenicity* and *virulence* mean?

Exercise 1. Find in the text English equivalents to the following Ukrainian words and word-combinations:

патогенний вид; взаємодія між хазяїном і патогеном; бінарний поперечний поділ; внутрішньоклітинні паразити; грибкові інфекції; плоскі, стрічкові і круглі черви; найпростіші, що передаються членистоногими; проказа і чума; губчастоподібна енцефалопатія великої рогатої худоби (коров'ячий сказ); пріонна інфекція овець; трансмісивна губчаста/спонгіформна енцефалопатія; нестатеве і статеве розмноження; хвороботворні властивості популяції (штаму) патогенного виду, причинно-наслідковий зв'язок між бактеріями і клінічним захворюванням

2. Завдання для самоконтролю:

Match the terms to the definitions

Basic Infectiology Terminology (Host)

Term	Explanation
5. Contamination	1) Infection arising from invasion of host by microorganisms from sources external to it
6. Colonization	2) Infection that remains restricted to the portal of entry and

	surrounding area
7. Infection	3) Brief presence of microorganisms in the bloodstream
8. Inapparent (or subclinical) infection	4) Lymphogenous and/or hematogenous spread of invading pathogen starting from the portal of entry; infection of organs to which pathogen shows a specific affinity (organotropism); three stages: incubation, generalization, organ manifestation
9. Infectious disease (or clinical infection)	5) Occurrence of a second infection in the course of a first infection
10. Probability of manifestation	6) Series of infections by different pathogens
11. Endogenous infection	7) Series of infections by the same pathogen
12. Exogenous infection	8) Frequency of clinical manifestation of an infection in disposed individuals (%)
13. Nosocomial infection	9) Infection acquired during hospitalization (urinary tract infections, infections of the respiratory organs, wound infection, sepsis)
14. Local infection	10) Infection arising from the colonizing flora
15. Generalized infection	11) Infection without outbreak of clinical symptoms
16. Sepsis	12) Systemic disease caused by microorganisms and/or their toxic products; there is often a localized focus of infection from which pathogens or toxic products enter the bloodstream continuously or in intermittent phases
17. Transitory bacteraemia/ viremia/parasitaemia	13) Infection with outbreak of clinical symptoms
18. Superinfection	14) Presence of microorganisms on skin or mucosa; no penetration into tissues; typical of normal flora; pathogenic microorganisms occasionally also show colonization behaviour
19. Relapses	15) Invasion of a host organism by microorganisms, proliferation of the invading organisms, and host reaction
20. Reinfection	16) Microbiological presence of microorganisms on objects, in the environment, or in samples for analysis

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Match the terms to their definitions:

4. Fermentation	3. is a taxonomic category ranking used in biological classification that is below family and above species
5. Bacillus	4. is a relatively rare bacterial infection that affects people and animals. It can pass from animals to humans when an unhealed break in the skin comes in contact with water or soil where animal urine is present.
6. Agar	5. is the process in which a substance breaks down into a simpler substance. Microorganisms like yeast and bacteria usually play a role in this process.
7. Leptospirosis	6. is a specialized defense protein synthesized by the vertebrate

	immune system.
8. Genus	7. is any of a genus of rod-shaped gram-positive usually aerobic bacteria producing endospores and including many saprophytes and some parasites.
9. Antibody	8. is a dried hydrophilic, colloidal substance extracted from various species of red algae. It is used in cultures for bacteria and other microorganisms, in making emulsions, and as a supporting medium in procedures such as immunodiffusion and electrophoresis.
10. Chancre	9. potentially life-threatening invasion of the bloodstream by pathogenic agents and especially bacteria along with their toxins from a localized infection (as of the lungs or skin) that is accompanied by acute systemic illness.
11. Septicemia	10. is the first sign of syphilis; it is a small, painless sore. It can appear on the sexual organs, rectum, or inside the mouth.

Exercise 2. Read the text below. Use the word given in brackets to form a word that fits in the gap:

“Virulence” is a _____ (quantity) measure of the pathogenicity of a micro-organism that may be _____ (expression) by the ratio of the number of individuals developing clinical _____ (ill) to the number of individuals exposed to the micro-organism, or in a _____ (compare) manner, by the number of individuals that develop clinical illness if the same dose of different microorganisms is _____ (application) to each of them.

_____ (pathogen) bacteria have evolved a number of _____ (difference) mechanisms, which result in disease in the host. The virulence factors and determinants used by bacteria to _____ (interaction) with the host can be unique to specific pathogens or conserved across several different species or even genera. For instance, _____ (commonly) mechanisms for _____ (adhere), invasion, evasion of host _____ (defend) and damage to host cells are shared by profoundly different microbial pathogens.

Exercise 3. Find misused words and replace them with correct ones (form a word that fits suitably). Explain your choice.

Covid-19 patients who recovery from the disease still have robust immune from the coronavirus eight months after infection, according to a new study. The result is an encouraging sign that the authors interpret to mean immunity to the viral probably lasts for many years, and it should alleviate fearful that the covid-19 vaccine would require repeated booster shots to protective against the disease and final get the pandemic under control.

“There was a lot of concerned originally that this virus might not induce much memory,” says Shane Crotty, a research at the La Jolla Institute for Immunology in California and a co-author of the new paper. “Instead, the immune memory looks quite good.”

The study, published January 6 in Science, contrasts with earlier findings that suggestion covid-19 immunity could be short-lived, putting millions who’ve already recovered at risk of reinfected. That predicament wouldn’t have been a totally surprise, since infection by other coronaviruses generates antibodies that fade fairly quick. But the new study suggests reinfection should only be

a problem for a very small percentage of people who've development immunity—whether through an initial infection or by vaccination.

In fact, the new study does show that a small number of recovered people do not have long-lasting immunize. But vaccinate ought to offset that problem by ensuring herd immunity in the larger population.

Тестові завдання для самоконтролю

Translate the tests.

1. From the faeces of a patient with acute gastroenteritis a pure culture of microorganisms was obtained. The microorganisms are small mobile slightly curved gram-negative bacilli that within 6 hours grow into a light blue film on the 1% alkaline peptone water. Such properties are characteristic of the following microorganism:

- A Vibrio
- B Spirochete
- C Clostridium
- D Bacillus
- E Spirillum

2. A patient was brought into the infectious diseases hospital on the 8th day after the disease onset. The patient complains of headache, malaise, and weakness. A sample of blood was taken for the serological test. Widal agglutination test results with blood sample diluted 1:200 and typhoid fever O-diagnosticum were positive. What diagnosis can be made based on the results of this test?

- A Typhoid fever
- B Dysentery
- C Cholera
- D Leptospirosis
- E Tuberculosis

3. A patient presented with indigestion, stomach-aches, and excessive salivation. Similar symptoms had already been observed in this patient previously. Laboratory analysis detected oval eggs covered with lumpy capsules in the patient's faeces. What is the most likely cause of the patient's disorder?

- A Ascariasis
- B Trichocephaliasis
- C Diphyllbothriasis
- D Enterobiasis
- E Fascioliasis

4. A medical student was hospitalized into the infectious diseases unit on the 2nd day after the disease onset; the patient is suspected to have infectious mononucleosis. What results of laboratory analysis can confirm this diagnosis immediately on the day of the hospitalization?

- A IgM antibodies to Epstein-Barr virus were detected
- B IgM antibodies to herpes simplex virus were detected
- C Fourfold increase in number of antibodies to Epstein-Barr virus was detected
- D Herpes virus was isolated
- E Cytomegalovirus antibodies were detected

5. A 40-year-old man developed skin redness and swelling in the neck area, where eventually a small abscess appeared. On section the focus is dense and yellow-green colored. In the purulent masses there are white granules. Histologically there are fungal druses, plasma and xanthoma cells, and macrophages detected. Specify the most correct etiological name of this pathological process:

- A Actinomycosis
- B Furuncle

C Carbuncle

D Syphilis

E Leprosy

6. A toxin neutralized with 0.4% formaldehyde under 37-40°C for 4 weeks is used for vaccination. This preparation was first used by Gaston Ramon for diphtheria prevention. Name this preparation:

A Anatoxin

B Immunoglobulin

C Antitoxic serum

D Adjuvant

E Inactivated vaccine

7. It is planned to use the territory of an old cattle burial ground (which is not used for more than 50 years) for building houses. But ground analysis revealed presence of the pathogen of the very dangerous illness. Which of the indicated microorganisms is likely to remain in the ground for such a long time?

A Bacillus anthracis

B Mycobacterium bovis

C Brucella abortus

D Francisella tularensis

E Yersinia pestis

8. Sanitary bacteriological research on water by the membrane filter method revealed two red colonies on a membrane filter (Endo agar) through which 500 ml of analysed water were passed. Calculate the coli index and coli titer of the analysed water:

A 4 and 250

B 2 and 500

C 500 and 2

D 250 and 2

E 250 and 4

9. While examining a patient an otolaryngologist noticed hyperaemia and significantly oedematous tonsils with a greyish film upon them. Microscopical examination of this film revealed some gram-positive bacilli placed at an angle with each other. What disease might be suspected?

A Diphtheria

B Meningococcal nasopharyngitis

C Epidemic parotitis

D Angina

E Scarlet fever

10. A man who was bitten by the unknown dog applied to the surgeon. Wide ragged wounds were localized on the face. What curative-prophylactic aid should be given to prevent rabies?

A Start immunization with rabies vaccine

B Hospitalize the patient and keep under the doctors supervision

C Immediately inject normal gamma globulin

D Prescribe combine antibiotic therapy

E Immediate injection of DPT (Diphtheria, Pertussis, Tetanus) vaccine

11. In a patient with clinical signs of immunodeficiency the number and functional activity of T and B lymphocytes are not changed. Defect with dysfunction of antigen-presentation to the immunocompetent cells was found during investigation on the molecule level. Defect of what cells is the most probable?

A Macrophages, monocytes

B 0-lymphocytes

C NK-cells

D T-lymphocytes, B-lymphocytes

E Fibroblasts, T-lymphocytes, B-lymphocytes

12. During influenza epidemic, morbidity in the schoolchildren, who did not participate in sports, was 40%, while in the schoolchildren, who engaged in regular physical activities, morbidity did not exceed 20%. What adaptation mechanism ensured low morbidity in the physically active schoolchildren?

A Cross-adaptation

B Specific adaptation

C Physiological adaptation

D Biochemical adaptation

E Genetic adaptation

13. A 5-year-old child is diagnosed with Bruton syndrome (X-linked agammaglobulinemia) that manifests itself as severe clinical course of bacterial infections and absence of B lymphocytes and plasma cells. What changes of immunoglobulin content can be observed in blood serum of the child with immunodeficiency?

A Decreased IgA, IgM

B Increased IgA, IgM

C Decreased IgD, IgE

D Increased IgD, IgE

E No changes

14. A young woman, a foreign student from Tehran, has made an appointment with the urologist. She complains of the sensation of heaviness in her lower abdomen and a small amount of blood being excreted with urine at the end of each urination. Microscopy of urine detects the presence of parasite eggs, approximately 140x70 micron in size, with a terminal spike. What diagnosis can be made by the infectious diseases specialist?

A Schistosomiasis

B Opisthorchiasis

C Dicrocoeliasis

D Paragonimiasis

E Fascioliasis

15. Sanitary assessment of a pond, where the children from a recreation summer camp take their swims, detected there oval cysts 50-60 micron in diameter, with 2 nuclei visible in their cytoplasm (macronucleus and micronucleus). What protozoa do these cysts belong to?

A Balantidium

B Lamblia

C Toxoplasma

D Amoeba

E Euglena

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Тема 9: PHARMACOLOGY

Мета: ознайомити здобувачів вищої освіти з медичними термінами, що стосуються фармакології: їх переклад, особливості словотворення, аналіз елементів греко-латинського походження.

Основні поняття: фармакологія, ліки, антидоти, шлях застосування, показання.

План:

1. Перевірте засвоєння матеріалу за темою:

Exercise 1. Translate the word combinations into Ukrainian:

Suppress the central nervous system; several miscarriages in anamnesis; facilitate carrying of a pregnancy; intestinal peristalsis failed to restore; admission room; complaints of edemas, rapid heart rate and dyspnea; diagnosed with chronic heart failure; impaired vision of close objects; dilated pupils; indistinct speech; indicate overdosage of a drug; develop water retention; concomitant disease exacerbated; cancel prescription of a drug; necessitate cancellation; prescribe a drug with mucolytic action; specify the sleep-inducing mechanism of a drug; an appropriate drug; remove the complication; absence of marked sedative action; persistent edemas.

Exercise 2. Match the terms with their definitions:

1) neurotransmitter	a) the innermost part of the adrenal gland, consisting of cells that secrete <u>epinephrine</u> (adrenaline), <u>norepinephrine</u> (noradrenaline), and a small amount of <u>dopamine</u> in response to stimulation by <u>sympathetic preganglionic neurons</u>
2) synaptic cleft	b) an extreme, often life-threatening allergic reaction to an antigen to which the body has become hypersensitive.
3) adrenal medulla	c) breakdown of the molecule glycogen into glucose, a simple sugar that the body uses to produce energy
4) catecholamine	d) breakdown of fats and other lipids by hydrolysis to release fatty acids
5) glycogenolysis	e) a group of eye diseases which result in damage to the <u>optic nerve</u> and cause <u>vision loss</u>
6) lipolysis	f) the space that separates a neuron and its target cell at a chemical <u>synapse</u> .
7) glaucoma	g) a <u>monoamine neurotransmitter</u> , an <u>organic compound</u> that has a <u>catechol</u> (benzene with two <u>hydroxyl</u> side groups next to each other) and a <u>side-chain amine</u>
8) anaphylactic shock	h) a chemical substance which is released at the end of a nerve fiber by the arrival of a nerve impulse and, by diffusing across the synapse or junction, effects the transfer of the impulse to another nerve fiber, a muscle fiber, or some other structure

2. Завдання для самоконтролю :
Match the terms to their definitions:

amebic dysentery, bladder atony, epileptic seizures, gastric ulcer, gingivostomatitis, heart failure, hyperdiuresis, myasthenia, urolithiasis, nephropathy, polyneuritis, , tuberculosis

1. an open sore or raw area in the lining of the stomach or intestine.
2. a lifelong condition in which the heart muscle can't pump enough blood to meet the body's needs for blood and oxygen.
3. a chronic autoimmune, neuromuscular disease that causes weakness in the skeletal muscles
4. the formation of calcifications in the urinary system, usually in the kidneys or ureters, but may also affect the bladder and/or urethra.
5. the clinical manifestation of an abnormal, excessive, purposeless and synchronized electrical discharge in the brain cells.
6. a severe form of amebiasis associated with stomach pain, bloody stools (poop), and fever.
7. the inability to effectively contract the bladder resulting in excessive urine storage
8. a painful oral infection that can cause blisters on the lips and canker sores in the mouth.
9. is caused by a bacterium called Mycobacterium tuberculosis.
10. a broad medical term used to denote disease or damage of the kidney, which can eventually result in kidney failure.
11. excessive secretion of urine
12. the simultaneous malfunction of many peripheral nerves throughout the body.

3. Завдання для самостійного опрацювання матеріалу:

Exercise 1. Give synonyms of the following words:

prescribe		fast	
lower		worsening	
treatment		detect	
adverse effects		medication	
stop		excitation	

Exercise 2. Fill the gaps in the text with the missing parts:

Antifungal drugs

Molds, yeasts, and 1. _____ are all types of fungi. Of the millions of different species of fungi, only a few hundred are responsible for making people sick. Fungi can cause a variety of conditions. Most of them affect the nails or skin, causing 2. _____ conditions, but some can cause more serious infections. Fungi can cause 3. _____, blood infections, and lung infections. Antifungal drugs are the medications people use to treat fungal infections. People can take antifungal drugs orally, apply them topically, or administer them intravenously 4. _____. Antifungal medications usually work either by killing the fungal cells or stopping them from 5. _____.

There are four main types of antifungal drugs. These are:

5. polyenes work by 6. _____ of the fungal cells to be more porous, thus making them more likely to burst
6. azoles are known to be 7. _____ which inhibit the synthesis of sterol in fungi
7. allylamines work by inhibiting an enzyme that the membrane of the cell requires to operate correctly
8. echinocandins interfere with an enzyme involved in creating the fungal 8. _____.

growing and multiplying	rashes or other skin	fungistatic agents	cell wall
altering the wall	meningitis	mushrooms	through an IV drip

Exercise 3. Match the parts of the sentences.

1.	Your test results	a	test came back positive/negative
2.	I'm afraid	b	the prognosis isn't good
3.	You have a long	c	you're ready to go home
4.	We have several	d	options to discuss
5.	The blood	e	here overnight
6.	The transfusion	f	diabetes
7.	It looks like	g	road to recovery
8.	I'd like to keep you	h	have come in
9.	You're not	i	in the clear yet
10.	We've ruled out	j	was a success

Тестові завдання для самоконтролю:

Read and translate the tests:

1. A woman with seasonal vasomotor rhinitis, who works as a train dispatcher and is an outpatient, should be prescribed an antihistaminic drug that does not suppress the central nervous system. Name this drug:

1. Loratadine
2. Dimedrol (Diphenhydramine)
3. Diprazine (Promethazine)
4. Suprastin (Chloropyramine)
5. Tavegil (Clemastine)

2. A pregnant woman with several miscarriages in anamnesis is prescribed a therapy that includes vitamin preparations. What vitamin facilitates carrying of a pregnancy?

1. Alpha-tocopherol
2. Folic acid
3. Cyanocobalamin
4. Pyridoxal phosphate
5. Rutin

3. During treatment with bismuth preparations a patient with syphilis developed gray spots on his oral mucosa and nephropathy symptoms. What drug is used as an antidote to bismuth preparations poisoning?

1. Unithiol
2. Nalorphine
3. Bemegrade
4. Naloxone
5. Methylene blue

4. On the 2-3 day after the gastric resection the patient's intestinal peristalsis failed to restore. What should the patient be prescribed to stimulate the function of his gastrointestinal tract?

2. Proserin
3. Platyphyllin
4. Cyclodol (Trihexyphenidyl)
5. Atropine
6. Dithyline (Suxamethonium chloride)

5. A man came into the admission room with complaints of edemas, rapid heart rate, dyspnea, and cyanotic mucosal tunics. He was diagnosed with chronic heart failure. What drug should be prescribed to improve the patient's general state?

3. Digoxin

4. Papaverine hydrochloride

5. Mesaton (Phenylephrine)

6. Cordiamin

7. Nitroglycerine

6. A patient complaining of dizziness, thirst, difficult swallowing, and impaired vision of close objects has addressed a doctor. Objectively: respiratory rate is increased, pupils are dilated, general agitation, talkativeness, though the speech is indistinct. BP is 110/70 mm Hg, heart rate is 110/min. Given symptoms can indicate overdose of the following drug:

1. Atropine

2. Morphine

3. Ephedrine

4. Aminazine

5. Caffeine

7. Due to prolonged taking of a drug the patient can develop osteoporosis, gastric mucosal erosions, hypokalemia, sodium and water retention, and decreased blood content of corticotropine. Specify this drug:

1. Prednisolone

2. Hydrochlorothiazide

3. Digoxin

4. Indometacin

5. Reserpine

8. A woman with polyarticular rheumatoid arthritis was prescribed a non-steroidal antiinflammatory drug - diclofenac sodium. After the patient has been taking it for some time, her concomitant disease exacerbated, which forced the doctor to cancel the prescription of this drug. What concomitant disease could necessitate cancellation of this drug prescription?

A. Ulcer disease

B. Ischemic heart disease

C. Diabetes mellitus

D. Essential hypertension

E. Bronchial asthma

9. During regular check-up a child is determined to have interrupted mineralization of the bones. What vitamin deficiency can be the cause?

4. Calciferol

5. Riboflavin

6. Tocopherol

7. Folic acid

8. Cobalamin

10. A 46-year-old patient suffering from ulcer disease of the stomach is diagnosed with rheumatoid arthritis. What antiinflammatory drug would be most advisable in this case?

1. Celecoxib

2. Prednisolone

3. Analgin (Metamizole)

4. Promedol (Trimeperidine)

5. Paracetamol

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Тема 10: SYSTEMATIZATION: THE MAIN GROUPS OF TERMS USED IN MEDICINE.

Мета: систематизувати отримані здобувачами вищої освіти знання, вміння та навички з медичної англійської мови професійного спрямування.

Основні поняття: діабет, СНІД, медична термінологія.

План:

1. Теоретичні питання

- 1) What is diabetes mellitus?
- 2) How many types of diabetes you know?
- 3) What is Type 1 diabetes?
- 4) What is Type 2 diabetes?
- 5) What is gestational diabetes?
- 6) When did insulin become available?
- 7) What are the symptoms of diabetes?
- 8) What are the risk factors for Type 1 and Type 2 diabetes?

1. How is diabetes controlled?
2. What are the main complications of diabetes?
3. What is AIDS?
4. What systems does HIV damage?
5. What is the difference between two HIV strains?
6. How is HIV transmitted?
7. What are the stages of HIV infection?
8. What symptoms is each HIV stage characterized by?
9. What illnesses are AIDS patients vulnerable to?
10. What treatment for HIV or AIDS exists nowadays?
11. What is the action of antiretroviral drugs?
12. What are the adverse reactions of HIV drugs?

2. Питання для самоконтролю

Exercise 1. Say if the statements are true or false according to the text:

1. Diabetes mellitus is characterized by high blood sugar level.
2. It's a very common disease in the world.
3. There are 2 types of diabetes.
4. Gestational diabetes is diabetes in young children
5. Polydipsia is a classical symptom of diabetes.
6. In type 1 diabetes symptoms develop slowly.
7. Diabetes is an infectious disease
8. Diabetes type 1 is controlled with insulin
9. All diabetic patients must control their level of blood sugar.
10. Diabetic retinopathy, diabetic neuropathy, diabetic nephropathy, foot ulcers are common complications of the disease.

3. Завдання для самостійного опрацювання матеріалу (translate):

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
- 3replicates 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, CH₃CH₂CH₂COOH, with an unpleasant odor.
- a) butiric acid** b) oxalic acid c) sulphuric acid d) acetic acid
- 36.....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

Тестові завдання для самоконтролю:

Find the correct answers:

1. HIV destroys the ... system first.
a) immune b) respiratory c) nervous d) circulatory

2. ... strains of HIV cause AIDS.
a) 3 b)4 c)2 d) 6

3. Once immunodeficiency occurs and is not treated, death usually follows ...years of the first onset of symptoms.
a) 1-2 b) 2-3 c) 4-5 d) 10-11

4. The AIDS virus is transmitted ...
a) by casual contact b) by talking c) through bodily fluids d) by sharing clothes

5. HIV infection stages are acute infection (also known as primary infection), latency (window period) and ...
a) the second stage b) AIDS c) HIV 2 d) death

6. During 2-4 weeks post-exposure a person may develop ...
a) tumours b) ulcers c) influenza-like symptoms d) diarrhea

7. Treatment with ... can prevent AIDS from developing.
a) antiretroviral drugs b) antibiotics c)barbiturates d) vitamins

8. People living with AIDS are NOT more vulnerable to ... than others:
a) cancer b) tuberculosis c) caries d) toxoplasmosis

9. AIDS is a ... disease.

a) bacterial b) infectious c) hereditary d) genetic

10) ...is NOT a characteristic side-effect of AIDS.

a) diarrhea b) headache c) nausea d) fatigue

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