



НУЗ

**Методичні рекомендації для підготовки до ПМК
студентів спеціальності
«Лабораторна діагностика»**

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я
НАЦІОНАЛЬНИЙ ФАРМАЦЕВТИЧНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ

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Англійська мова.

Методичні рекомендації для підготовки до ПМК студентів спеціальності
«Лабораторна діагностика»

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Англійська мова. Методичні рекомендації для підготовки до ПМК студентів спеціальності «Лабораторна діагностика»
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Видання містить методичні рекомендації щодо роботи з підготовки до ПМК для студентів спеціальності «Лабораторна діагностика» на практичних заняттях та під час самостійного опанування матеріалу здобувачами вищої освіти першого року навчання з рівнем володіння мови на рівень В1+. Тематичне наповнення відповідає навчальному плану та робочій програмі. Метою даних методичних рекомендацій є запропонувати додатковий до основного підручника матеріал, який включає лексику за фахом. Видання може бути корисними для здобувачів вищої освіти денної, заочної, дистанційної форм навчання, викладачів англійської мови.

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ПЕРЕДМОВА

Видання містить, практичні завдання для аудиторної самостійної роботи здобувачів вищої освіти. Видання може бути використане як додатковий навчальний матеріал до основного підручника з дисципліни «Англійська мова» для студентів спеціальності «Лабораторна діагностика». Методичні рекомендації складаються з чітко структурованих розділів, згідно навчальній програмі, містять матеріал з тематики професійної діяльності майбутнього фахівця галузі. Кожен розділ надає чітко визначені мовні структури і словниковий запас. Методичні рекомендації містять основні завдання та види діяльності націлені на підготовку до підсумкового модульного контролю: translate; write a summary; make up sentences. У виданні є розділ з текстами, за темами пов'язаними з майбутньою сферою діяльності здобувачів вищої освіти, для додаткового читання. Формування компетентностей з англійської мови під час навчання студентів в університеті є важливим для отримання знань та вмінь, які забезпечать успішність майбутніх фахівців у реальному суспільстві.

UNIT 1

Clinical diagnostic laboratory. Types of clinical laboratories

Task 1. Translate the following sentences.

1. Clinical laboratory diagnostics is a medical diagnostic specialty, consisting of a set of in vitro studies of the biomaterial of the human body.

2. Clinical diagnostic laboratories are divided into two large groups.

3. The structure of the laboratory service corresponds to the needs of healthcare institutions.

4. This is done by specialized laboratories: hematological, cytological, biochemical, immunological.

5. Clinical diagnostic laboratory is a diagnostic subdivision of a medical institution and is created as a department.

6. Clinical diagnostic laboratory, regardless of subordination and form of ownership, must have a certificate for the chosen type of activity.

7. A medical and clinical laboratory technician is someone who conducts lab tests ordered by doctors and other healthcare providers.

8. The main task of the Clinical diagnostic laboratory is conducting clinical laboratory studies in accordance with the profile of the healthcare facility.

9. The main task of the Clinical diagnostic laboratory is introduction of progressive forms of work, new research methods with high analytical accuracy and diagnostic reliability.

10. The main task of the Clinical diagnostic laboratory is improving the quality of laboratory research through the systematic implementation of in-laboratory quality control of laboratory research.

Task 2. GRAMMAR

Put the verb in the correct form.

1. By the time you arrive, they _____ (to surf) for over three hours.
2. He let us _____ (to try) his new invention.
3. She _____ (to suffer) from indigestion after eating fatty food.
4. Psychiatrists _____ (to be) doctors who cure mental illness.
5. After _____ (to eat), I often have a bloated stomach.
6. The side effects of the medication _____ (to include) nausea and drowsiness.
7. When Sue was younger she _____ (can) run for hours.
8. You _____ (to try) hypnotism for your insomnia.
9. In order to avoid injury, it is best _____ (to warm up) before exercising.
10. The massage _____ (to help) to alleviate the dull pain in his muscles.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Спеціалізовані лабораторії _____

2. Клінічні лабораторії _____

3. Предметне скло мікроскопа _____

4. Аналітична точність _____

5. Клінічні дані _____

6. Лабораторний звіт _____

7. Сушильні шафи _____

8. Таблиця елементів _____

9. Здатність _____

10. Впровадження _____

Task 4. Write a summary about clinical diagnostic laboratory. (6-10 sentences).

UNIT 2

What is a Medical and Clinical Laboratory Technician?

Task 1. Translate the following sentences.

1. A medical and clinical laboratory technician is someone who conducts lab tests ordered by doctors and other healthcare providers.

2. A laboratory technician's work is very important to a patient's healthcare.

3. A four-year medical laboratory degree program is needed to become a medical laboratory technologist.

-
4. Technologists generally earn more than technicians do and have more opportunities for advancement.

 5. Medical and clinical laboratory technicians are the people who perform routine medical laboratory tests, giving physicians the information necessary for diagnosing, treatment, and preventing disease.

 6. They can look for abnormal cells in blood and body fluids, match blood for transfusions, and test for drug levels in blood.

 7. Medical and clinical laboratory technicians use microscopes, cell counters, and other sophisticated lab equipment.

 8. They also use computerized apparatus and automated equipment that can perform a lot of tests simultaneously.

 9. After test is done and a specimen is examined, they analyze the results and deliver those results to the physician.

 10. When examining and analyzing body fluids and cells, they can determine the chemical content of fluids, look for bacteria, parasites, and other microorganisms.

Task 2. GRAMMAR

Put the verb in the correct form.

1. If an illness _____ (to be) highly contagious, it can spread very quickly.
2. Several inventions _____ (to be) on display at the science fair.
3. She _____ (not to have) any work experience in a laboratory.
4. Karen told me she _____ (to see) the exhibit the day before.

5. The reason why he _____ (to go) to Paris is to visit the Eiffel Tower.
6. "Doctors have to do a lot of work" - "Yes, but they _____ (to pay) well."
7. The patient _____ (to treat) for his illness and recovered.
8. Scientists continue _____ (to conduct) experiments on dinosaur DNA.
9. Tom _____ (to make) a slow recovery from his accident.
10. The doctor _____ (to administer) first aid to the accident victim.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Лаборант _____

2. Зразки _____

3. Відхилення _____

4. Лаборант-технік _____

5. Запобігти _____

6. Рідини організму _____

7. Переливання _____

8. Розшифрувати _____

9. Кількість крові _____

10. Примірник _____

Task 4. Write a summary”What is a Medical and Clinical Laboratory Technician?”
(6-10 sentences).

UNIT 3

Blood test. Making of diagnostic decision

Task 1. Translate the following sentences.

1. A blood test is a laboratory analysis performed on a blood sample that is usually extracted from a vein in the arm using a hypodermic needle or via finger prick.

2. Multiple tests for specific blood components, such as a glucose test or a cholesterol test, are often grouped together into one test panel called a blood panel or blood work.

3. Blood tests are often used in health care to determine physiological and biochemical states, such as disease, mineral content, pharmaceutical drug effectiveness, and organ function.

4. Typical clinical blood panels include a basic metabolic panel or a complete blood count.

5. The use of clinical laboratory test results in diagnostic decision making is an integral part of clinical medicine.

6. The menu of laboratory tests available to clinicians constitutes an impressive array that has expanded exponentially since 1920 when the first useful test for the quantification of serum glucose concentration was devised by Folin and Wu.

7. Blood tests are also used in drug tests to detect drug abuse.

8. If your white blood cell count is off, it could signal an infection somewhere in your body.

9. I am putting a tourniquet on your arm to plump up the vein. It will only feel like a little pin prick.

10. Your doctor has requested a check of your white blood count.

Task 2. GRAMMAR

Put the verb in the correct form.

1. Brian was angry because he _____ (to wait) for Hannah for an hour.
2. Mary _____ (to be) quite unfair at times.
3. The course _____ (to aim) to educate students in theory and provide them with practical skills.
4. By the time we arrived at the beach, it _____ (to start) to pour with rain.
5. We` _____ (to finish) studying bacteria in Biology and we`ve now started a new topic – the human body.
6. Harold _____ (to live) in this village since he was a child.
7. I _____ (to refresh) much over the weekend. I just wanted to relax.
8. Simon _____ (to go) to Brazil next week.
9. Repetitive strain injury is a common problem for people, who _____ (to work) with computers.

10. All children _____ (to receive) vaccinations against polio and tetanus.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Аналіз крові _____

2. Зразок _____

3. Голка для проколювання пальця _____

4. Голка для підшкірних ін'єкцій _____

5. Клінічний аналіз крові _____

6. Загальний клінічний аналіз крові _____

7. Залежність _____

8. Кількість, яка вражає _____

9. Багаточисельний (десять тисяч) _____

10. Через _____

Task 4. Write a summary "Blood test. Making of diagnostic decision"(6-10 sentences).

UNIT 4

Biochemical analysis

Task 1. Translate the following sentences.

1. A basic metabolic panel measures sodium, potassium, chloride, bicarbonate, blood urea nitrogen magnesium, creatinine, glucose, and sometimes calcium.

2. Tests that focus on cholesterol levels can determine LDL and HDL cholesterol levels, as well as triglyceride levels.

3. Some tests, such as those that measure glucose or a lipid profile, require fasting (or no food consumption) eight to twelve hours prior to the drawing of the blood sample.

4. For the majority of tests, blood is usually obtained from the patient's vein.

5. Other specialized tests, such as the arterial blood gas test, require blood extracted from an artery.

6. Blood gas analysis of arterial blood is primarily used to monitor carbon dioxide and oxygen levels related to pulmonary function, but is also used to measure blood pH and bicarbonate levels for certain metabolic conditions.

7. While the regular glucose test is taken at a certain point in time, the glucose tolerance test involves repeated testing to determine the rate at which glucose is processed by the body.

8. Analysis of 15 different blood test readings to provide information about overall health.

9. This analysis provides an overall picture of the metabolism and chemical balance of the body.

10. This test is performed to measure the function of kidney.

Task 2. GRAMMAR

Put the verb in the correct form.

1. The oil spill _____ (to have) a huge impact on all marine life.
2. The favela where the children _____ (to live) is one of the largest slums in the South America.
3. We _____ (to need) to be more realistic about the possible existence of UFOs.
4. Jan is _____ (to burn) out from studying and wants to take a gap year.
5. If I _____ (to be) rich, I would donate lots of money to charity.
6. I wish there _____ (to be) more cycle lanes in town, because I enjoy riding my bike.
7. A large ape-like creature _____ (to spot) near the lake yesterday.
8. John _____ (to use) to travel when he was young.
9. If you have a problem while you are on holiday, you _____ (speak) to the travel agent.
10. Heart disease is more prevalent among people who _____ (to be) overweight or obese.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Магній _____

2. Креатинін _____

3. Сечовина _____

4. Глюкоза
(натще) _____

5. Споживання _____

6. Вилучений _____

7. Отриманий _____

8. Терпимість _____

9. Оброблений _____

10. Переливання _____

Task 4. Write a summary “Biochemical analysis”(6-10 sentences).

UNIT 5

Microbiological examination of blood

Task 1. Translate the following sentences.

1. Microbiological examination of blood is performed for diseases associated with the penetration of microorganisms into the bloodstream.

2. Microbes enter the bloodstream as a result of complications in a number of diseases, during blood transfusion and various manipulations, when sepsis, bacteremia, and bacterial shock develop.

3. A blood test for the content of microorganisms should be carried out in patients with prolonged unclear fever, especially in people with reduced immunological reactivity.

4. Almost all pathogenic and opportunistic pathogenic microorganisms can cause septicemia and bacteremia.

5. Blood for culture should be taken before the start of antibiotic therapy or after a certain period of time (8-10 hours) after the administration of the drug, which is necessary for its elimination from the body.

6. If blood culture is performed during antibiotic therapy, it is recommended to add substances that neutralize the effect of drugs to the nutrient media.

7. Blood from the patient for sowing should be taken at the beginning of the chill when the temperature rises.

8. Blood for inoculation is taken from a vein, strictly observing the rules of asepsis.

9. With a sterile syringe, 10-15 ml of blood is collected (2-3 ml in young children), which is either inoculated directly at the patient's bedside into a nutrient medium, or placed in a sterile container containing substances that prevent blood coagulation (0.3% solution sodium citrate, 0.1% sodium oxalate, 1 ml of heparin, etc.).

10. You can store blood in the refrigerator for no more than 1-2 hours; with longer storage, lysis of bacteria is possible.

Task 2. GRAMMAR

Put the verb in the correct form.

1. The United States of America _____ (to develop) its economy for over two hundred years since 1776.

2. Since the foundation of the state, the USA government _____ (to support) both public and private sector of the national economy.

3. However the number of farmers _____ (to decrease) constantly since 1920`s.

4. The work force _____ (to grow) rapidly since 1955 at the expense of the increase in the employment of women.

5. Due to the rapid economic development, which led to the prosperity of the nation the middle class _____ (go up) for over fifty years.

6. Since the approval of the Declaration of Independence the economy of the USA _____ (to develop) rapidly.

7. Our firm _____ (to purchase) the precious non-ferrous metals for half an hour when there was a terrible scandal.

8. We felt tired as we _____ (to work) at the biggest foreign exchange market for several days.

9. Tom _____ (to look) for these seeds for two months before he found it.

10. His sister _____ (to live) in Kiev for three years when she owed to borrow a loan.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Експертиза _____

2. Проникнення _____

3. Сепсис _____

4. Бактеріальний шок _____

5. Збудники _____

6. Гриби _____

7. Кандида-Альбіканс _____

8. Усунення _____

9. Середовище _____

10. Щеплення _____

Task 4. Write a summary “Microbiological examination of blood” (6-10 sentences).

UNIT 6

Conducting the research.

Task 1. Translate the following sentences.

1. To quantitatively determine the massiveness of blood seeding, a few drops of blood are inoculated from a syringe onto the surface of a Petri dish with 5% blood agar.

2. Crops are viewed daily. In the presence of growth on nutrient media, inoculations are made on plates with 5% blood agar, which are incubated under aerobic and anaerobic conditions.

3. A pure culture is isolated from the colonies grown on blood agar plates, identified and antibiotic susceptibility determined.

4. Inoculations of blood on a "biphasic" medium are viewed by tilting the bottle and thus moistening the surface of the slant agar with blood broth.

5. In this form, the vials can be kept for a month, which is necessary when slowly growing microorganisms are isolated.

6. Evaluation of the results of a microbiological blood test depends on the type of isolated microorganisms and the massiveness of growth.

7. Isolation of pathogenic species clearly indicates their etiological role in the disease.

8. At the final conclusion, the microbiologist must compare the data of the microbiological study with the clinical picture of the disease and the results of other analyzes.

9. If, 10 days after sowing blood, the growth of microbes on nutrient media is not detected, the analysis can be considered negative.

10. To avoid drying out of nutrient media, the bottle caps are waxed.

Task 2. GRAMMAR

Put the verb in the correct form.

1. _____ (to be) to the theatre for ages.
2. I told him _____ (to go not)
3. I _____ (to get) my car fixed for tomorrow.
4. He can't _____ (to get used to call) his boss every afternoon.
5. The interviewer asked me _____ (can) drive.
6. When I was in college, I _____ (to use exercise) more often.
7. He makes her children _____ (to learn) their lessons every day.
8. After we _____ (to have) dinner at home, we (to go) to the theatre.
9. We _____ (not to know) how (to do) after we get the results.
10. I _____ (to do) that if I (to be) you.

Task 3. Translate the following words and word combinations from Ukrainian into English and make up sentences with them.

1. Напівжидкість _____

2. Цукровий

бульйон_____

3. Черевний

тиф_____

4. Посів

крові_____

5. Анаеробні

умови_____

6. Культури_____

7. Забруднення_____

8. Дріжджі_____

9. Мікроби_____

10. Поживні

середовища_____

Task 4. Write a summary "Conducting the research"(6-10 sentences).

Texts for additional reading

Mykola Ovksentiyovych Valyashko

Mykola Ovksentiyovych Valyashko was born in Kupyansk, Kharkiv province. In 1869, two years before the birth of his son, Mykola's father, the pharmacist Ovksentiy Petrovich Valyashko, became the owner of a pharmacy in Kupyansk on Bazarnaya Square thanks to funds borrowed from the Belgorod pharmacist Goppe. Together with the pharmacy, O.P. Valyashko bought a house.

In 1893, Mykola Ovksentiyovych transferred to the service of a pharmacy at the clinics of the Kharkiv Imperial University and entered the pharmaceutical courses of the medical faculty. In 1895, he passed the exam for the title of pharmacist. He worked at Kharkiv University, first as a part-time (from November 1, 1895 to March 24, 1899), and then as a full-time laboratory assistant in a pharmaceutical laboratory (from March 24, 1899 to 1909). Working conditions in the laboratory were favorable, and M.O. Valyashko was able to significantly supplement their own theoretical knowledge. He worked a lot, and yet the first years in the laboratory were spent on mastering laboratory research methods and their improvement.

The activity of a laboratory assistant for more than 12 years was not only in preparing for lectures and participation in practical classes of students. M.O. Valyashko independently conducted practical classes of pharmacists on qualitative, weight and volume analysis, on forensic chemical and in various departments of technical analysis, on the manufacture of chemical and pharmaceutical preparations by pharmacists, on the elementary analysis of organic compounds, etc. Under his leadership, the works of J.V. Zilber "Research of the Crimean bitter almond" (1889), R.V. Zinchenko "Research of the Crimean wines" (1898), I.L. Livshits "Research of the Ukrainian mint oils" ("Pharmaceutical Bulletin", 1899), N.P. Krasovsky on the study of oil and berries of prickly buckthorn (dissertation for Master of Pharmacy, 1908).

On April 27 and 28, 1905, Mykola Ovksentiyovych gave two trial lectures at the Medical Faculty of Kharkiv University: on his own topic - "The current state of

the question of foxglove leaves" and on the set - "General sketch of a group of alkaloids", after which a private associate professor approved him. Pharmacy.

Employment with students-pharmacists was carried out in the period up to the date of the Russian Pharmacopoeia (6th edition, 1910) and the Russian Pharmacopoeia (3rd edition, 1913), and on the basis of such a pharmacy in the beginning of the preparation speech.

Practical employment in the pharmaceutical laboratory was carried out every day.

Bondar Volodymyr Stepanovich

Bondar Volodymyr Stepanovich was born on August 19, 1941. In Kup'yevakha village, Bogodukhiv district, Kharkiv region. Mr. Bondar graduated from Kharkiv Institute of Pharmacy (1970). He worked as a researcher at Kharkiv Research Institute of Chemistry and Technology of Medicinal Products (1970-1984).

In 1997, he received his PhD degree in Pharmaceutical Research and Development of Ancillary Processes for the Production of Medicinal Products.

He has been working in University since 1985 as assistant, associate professor (1995-1998), head of department of toxicological chemistry (1998-2010), since 2010 - professor of department of toxicological chemistry, since 2016. - Professor of the Department of Medical and Analytical Toxicology.

Awards: Honorary mention of the mayor (2002), Diplomas: Pharmaceutical Association of Ukraine (2005), Ministry of Education of Ukraine (2006), National Academy of Sciences of Ukraine (2008, 2011, 2016), Ministry of Health of Ukraine (2010), Badge "Excellent worker of education of Ukraine" (2010). Diploma of II degree for his scientific work for creating a new anti-diabetic drug "Diacamf" (2002).

School of Sciences: Prepared 7 candidates of sciences, 7 undergraduates. Author and co-author of more than 320 scientific and educational works, 4 patents and 35 textbooks.

Co-author of textbook "Pharmaceutical and medical-biological aspects of drugs" in two volumes (1999).

Borysiuk Yulian Galaktionovych

Yulian Galaktionovych Borysiuk was born on March 29, 1901 in the Kyiv province. In 1927, he graduated from the Kyiv Pharmaceutical Institute, then postgraduate studies at the Kharkov Pharmaceutical Institute. From 1932, he worked as an assistant, and from 1937 as an associate professor at the Department of Analytical Chemistry; from 1938 to 1966 he was the head of the Department of Pharmacognosy.

Doctor of Pharmaceutical Sciences, Professor Y.G. Borysiuk was a permanent member of the editorial boards of the "Pharmaceutical Journal" and the journal "Pharmacy". Marked by government awards.

Y.G. Borysiuk became the head of the institute on the eve of severe military examinations. It was his worries that managed to take out in full educational and scientific library, laboratory equipment.

Under the leadership and personal participation of the director in 1954 a new curriculum was introduced, which provided for a five-year period of study in 23 disciplines with an increase in the total percentage of specialized disciplines (up to 31%) and 30 weeks of internships -analytical laboratories, pharmaceutical plants and training practices in the culture of medicinal plants and procurement of medicinal plant raw materials.

Yulian Galaktionovich not only carried out the general management of scientific and educational activity of the institute, but also actively participated in it as a scientist. He worked in the field of research of essential and fatty oils of plants of the celery flora family of Ukraine and their use in medical practice. He developed drugs "Antibacterial drops", "Thymolicide", "Antibacterial candies". He has published 51 scientific articles, received three copyright certificates for inventions, two of which have found practical application in industry.

Testing in live organisms

Why do we do animal experiments? Because the animal experiments help for gathering scientific data to assess the good or bad effects of nutrients, chemicals in our food medicines and other products. New chemicals and drug products are emerging; we will still need animal testing for more data. The most data come from laboratory testing, sometimes trials are done on humans for testing a new medicine. It will be too risky to test it directly on human that is why we rely on animal experiments.

The experiments can be involved on many animals, but there is economic factor to take in consideration. That is why we choose the mice as the best testing candidate for many reasons: first the mice metabolism is closely to human metabolism means that the experiments test results can be similar to humans, secondly each female mouse can give big number of births per year from 48 till 80 mice and finally, their breeding charges are less comparing with other animals.

The society and scientists don't accept the animal testing concept for various reasons, but mainly they don't like animals suffering. That is why the new science and technology are making alternatives to animal testing not only viable but in some cases even better, using organs as chip tissue cultures and computer models can help us understand what happens inside our body.

These are alternatives we call them the 3R:

- Replacement : is recreating the same conditions inside a living being into cell technology or computer models so in this way along with observations from animal experiments we can use data generated without animals' test
- Reduction: means obtaining similar information from fewer animals or more information from the same. It can be achieved to improve study design and statistical analysis; the additional information can then be used to minimize the

number of animals needed.

- Refinement: is relieving the pain or distress of test animals and improving their welfare.

Now, the risk assessment without animal testing data effects is still difficult and more complex to predict from technological cell culture experiments like what happens in the real world when chemicals (pesticides and food additive authorized by the law) enter into our body. As a result, the animal experiment data are still needed.

3MICT

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Texts for additional reading.....24

Видання містить матеріал щодо роботи з на практичних заняттях та під час самостійного опанування матеріалу здобувачами вищої освіти першого року навчання. Тематичне наповнення відповідає навчальному плану та робочій програмі: тексти, лексико-граматичні вправи, додаткові матеріали. Видання може бути корисними для здобувачів вищої освіти денної, заочної, дистанційної форм навчання, викладачів англійської мови.

Методичні рекомендації

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