№ СТОМ-21

Federal State Budgetary Educational Institutionhigher education
"North Ossetian State Medical Academy"Ministry of Health
Russian Federation (FSBEI HE NOSMA Ministry of Health
Russia)

Department microbiology

METHODOLOGICAL INSTRUCTIONS FOR PERFORMANCE OF INDEPENDENT (OUTSIDE AUDIENCE) WORKS

on discipline - microbiology, virology, immunology - microbiology of oral cavity

basic professional educational program higher education -programs specialty on specialty 31.05.03 Dentistry,
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Vladikavkaz

Methodological materials are intended for teaching students of the 2nd year (3.4 semester) of the Faculty of Dentistry of the Federal State Budgetary Educational Institution of Higher Education NOSMA of the Ministry of Health of Russia in the discipline "Microbiology, virology, immunology- microbiology of oral cavity"

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FEDERAL STATE BUDGET EDUCATIONAL INSTITUTIONHIGHER EDUCATION
"NORTH OSSETIAN STATE MEDICAL ACADEMY»
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Department microbiology

COLLECTION METHODOLOGICAL DEVELOPMENT ON MICROBIOLOGY, VIROLOGY, IMMUNOLOGY -MICROBIOLOGY OF ORAL CAVITY FOR INDEPENDENT WORK OF STUDENTSDENTAL FACULTY

AUTUMN SEMESTER

Vladikavkaz

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The main purpose of the developments is methodological assistance to students for each practical training in the fall semester. The instructions are drawn up in accordance with Federal public educational standard Supreme andprofessional education.

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PRACTICAL OCCUPATION No. 1.

Theme: Microscopic method research. Equipment and regulations work in bacteriological laboratories. Luminous microscopy. Immersion system microscope. Morphology of microbes. Simple and complex methods of staining preparations. Peculiarities structures eu- and prokaryotic cells.

I. Questions for checks initial (base) level knowledge

1. 1. What such bacterium?
2. Differences prokaryotes from eukaryotes;
3. Device microscope?
4. Essence immersion microscopy;
5. Methods laboratory diagnostics infectious diseases;
6. Stages cooking smear;
7. Simple methods coloring bacteria.

II. Target tasks

Student should know:	**Literature**
1. Structure bacterial cells: cellular wall, cytoplasmic membrane, cytoplasm, nucleoid, ribosome, mesosomes, plasmids. Meaningthese formations for microbial cells. 2. The fundamental differences between simpleways coloring from complex. 3. Method and mechanism coloring on Gram. 4. Miscellaneous attitude bacteria to coloration on Gram. 5. Methodology coloring on Tsil-Nelsen.	1.Microbiology, virology and immunology./Under. ed. V.N. Tsareva. - M., 2009. 2.Medical and sanitary microbiology. / Under ed. A.A. Vorobiev,Yu.S. Krivoshein, V.P. Shirobokov. **Main literature:** 1. medical microbiology, virology and immunology./Under. ed. A.A. Vorobyov. M. 2004. 2. Microbiology./Under ed. A.A. Vorobiev, A.S. Bykov, E.P. Pashkova, A.M. Rybakova.- M., Medicine, 2003. 3. medical microbiology, immunology and virology. / under. ed. A.I. Korotyaeva, S.A. Babicheva. St. Petersburg. 2002. 4. Medical microbiology./Under Ed. Acad. RAMS IN AND. Pokrovsky.-M., 2001. 5.Microbiology and immunology./ Ed. A.A. Vorobiev.-M., 1999. 6. Microbiology With virology and immunology./Under ed. L.B. Borisov, A.M. Smirnova-M., 1994. **Additional literature:** 1. Sanitary microbiology and Virology./Under ed. Z.N. Kochemasova, S.A. Efremova, A.M. Rybakova.-M., 1987. 2. Fundamentals of Medical biotechnology./Under ed. A.A. Vorobiev.- M., 1990. 3. Nosocomial infection.Under ed.

	V.P. Venzela.-M., 1990. 4. Ecological immunology ./Under ed. R.M. Khaitova, B.V. Pinegina, H.I. Istamova.-M.: Publishing House VNIIRO, 1995. 5. Clinical Immunology./Ed. A.V. Karaulova.-M., 1999. 6. Immunology for doctors./Ed. S.A. Ketlinskaya, N.M. Kalinina.-SPB., 1998. 7. Brief terminological vocabulary microbiologist-biotechnics./Under ed. Yu.A. Ovchinnikova.-M.: An USSR, 1989. 8. Basics biotechnologies.-spb.: Publishing house firm " Science. -1995.
Student should be able to: 1. Prepare a smear from a pure culture bacteria E. coli S. aureus and paint difficult way. 2. technique and stages of cooking complex method coloring on Gramu, Tsil-Nielsen. 3. microscopy smear.	1. Workshop laboratory works With illustrated situational assignments in microbiology, immunology and virology./ Under. ed. A.A. Vorobiev, V.N. Tsareva. M., 2008. 2.Guide to practical exercises on medical microbiology, virology and Immunology./Under ed. V.V. Teza, 2002. 3. Lab Guide Microbiology./Under ed. L.B. Borisov.-M., 1984.

Replenish missing knowledge will help studying special literature specifiedhigher

III. Tasks for independent work on studied topic:

Complex staining methods suggest .....

To difficult method coloring refer .....

Coloring on method Grama includes from four stages

1. .....

2. .....

3. .....

four. .....

AT cellular wall gram-positive bacteria contained .....

The form bacteria determined structure her .....

AT difference from eukaryotic cells bacteria have: .....

L- forms bacteria - .....

AT composition cellular walls gram-positive bacteria included .....

coloring by Tsilyu – Nielsen used .....

acid resistance microorganisms conditioned presence in them cells .....

Coloring microorganisms on method Tsilya –Nielsen includes the following stages:

1 .....

2. .....

3. .....

cytoplasmic membrane is yourself ----------

Nucleoid .....

Plasmids .....

SELF CONTROL

1.The complex method includes coloring: (select 3 correctanswer)
A. By Gram;
B. Tsil-Nielsen;
C. Neisser;
G. Magenta.
2. The Ziehl-Nielsen stain is used for: (select onecorrect answer)
A. Detection of acid-resistant mycobacteria;B. grain
detection volute;
B. Detection of the bacterial cell wall;
C. Detection of flagella.
3. Gram stain is used for: (select onecorrect answer)
A. Detection of acid-resistant mycobacteria;
B. grain detection volute;
C. Detection of the bacterial cell wall;
D. Detection of flagella.
4. coloring by Neisser is used for: (choose onecorrect answer)
A. Detection of acid-resistant mycobacteria;
B. grain detection volute;
C. Detection of the bacterial cell wall;
D. Detection of flagella.
5.coloring by Burri-Ginsu is used for: (pick onecorrect answer)
A. Detection of acid-resistant mycobacteria;
B. grain detection volute;
C. Detection of the bacterial cell wall;
D Discoveries capsules.
6. Coloring according to the Romanovsky-Giemsa method allows you to contrast:(select one correct answer)
A. Intracellular nucleoproteins
B. Capsule polysaccharides;

C. Mycolic acid of acid-resistant bacteria;

D. cell wall.

7. Way coloring on Ziel-Nielsen apply for identifying in materialbacteria: (select one correct answer)

A. staphylococci and streptococci;

B. Tuberculosis bacillus and leprosy bacillus;

C dysentery sticks and salmonella;

D. bacillus Siberian ulcers and Clostridium gas gangrene.

8. Mycoplasmas are different from most bacteria: (select onecorrect answer)

A. The absence cellular walls;

B. The absence of a membrane surrounding the nucleoid;

C. The presence ribosome;

D. The absence kernels.

9. *COMPOSE BRAIN TEASER COUPLES: QUESTION ANSWER*

1. Components outdoor membranes bacteria
2. bacteria, having many flagella around cells
3. microorganisms, not having cellular walls

A. amphitriches
B. Peritrichi B.
Spirochetes G.
MycoplasmasD.
Porins

10. COMPOSE BRAIN TEASER COUPLES: QUESTION ANSWER

1. Function movement at bacteria
2. Adhesion bacteria to eukaryotic cells

A. Poriny
B. drinking
AT. Inclusions
G. Pseudopodia
D. Flagella

PRACTICAL EXERCISE No. 2.

Theme: Bacteriological method research. Physiology bacteria. Nutrients environment. Them classification, ways cooking, sterilization. Technics crops material on nutritious environment.

I. Motivational characteristic, themes lessons.

Mastering the issues of the bacteriological method for determining the pure culture of aerobic and anaerobic infectious diseases necessary for diagnosis and treatment, study which carried out same on department epidemiology, infectious diseases, children's infections and other clinical disciplines. Necessary initial level knowledge: ***Physiology microorganisms.***

II. Target tasks

STUDENT MUST KNOW:	STUDENT MUST BE ABLE TO:
1. Bacteriological method diagnostics infectious diseases, its purpose and	1. cook nutritious environment.

stages.	
2. Types nutrition bacteria.	2. Estimate efficiency sterilization and disinfection.
3. Principles of cultivation microorganisms.	
4. Nutrient media, requirements, presented to nutritious Wednesdays.	
five. Classification nutritional environments, composition and cooking.	
6. Methods sterilization.	
7. The mechanism of action of sterilizingfactors on the molecular structure microorganisms.	
8. Differences between the concepts of contamination and decontamination, disinfection andsterilization, asepsis and antiseptics.	
nine. Modern technologies sterilization and equipment.	
10. Ways to control efficiency sterilization and disinfection.	

Main literature:

1. Microbiology with Virology and Immunology / Ed. L.B. Borisova, AMSmirnova - M., 1994.
2. Medical microbiology. / Under ed. acad. RAMS IN AND. Pokrovsky. - M., 2001.
3. Microbiology, virology, immunology / Ed. A.A. Vorobyov. - M., 2004. Chapter3.
4. Microbiology, virology and immunology / Edited by V.N. Tsareva - M., 2009.Part 1, chapter 1.4
5. Management to practical classes on medical microbiology, virology andimmunology. /Under. ed. V.V. Tetza, 2002. Chapter 3
6. Practicum of laboratory work with illustrated situational tasks on microbiology, immunology and virology / Ed. V.N. Tsareva, A.A. Vorobyov. – M.,2008.

Additional literature:

Physiology microorganisms / methodical development to practical classes ongeneral microbiology. - Rostov-on-Don, 2001.

methodical recommendations, published department microbiology, virology and immunology F S B E I H E N O S M A Ministry of Health Russia:

1. Methods laboratory diagnostics / methodical recommendations for students medical, pediatric, dental, pharmaceutical faculties, faculty higher nursing education. - Vladikavkaz, 2003.
2. Fence pathological material for microbiological, virological and serological diagnostics infections / Educational and methodical development for students higher nursing education. - Vladikavkaz, 2005.
3. Guidelines for independent work of students in microbiology / Educational and methodical recommendations. - Vladikavkaz, 2003.
4. Collection methodical developments on microbiology for students medical, pediatric, medical-prophylactic and pharmaceutical faculties / Educational methodological development, part I.- Vladikavkaz, 2008.

III. Tasks for independent extracurricular work

1. Give definition microbiological research allocation pure culturesmicroorganisms. What are the main principles?

2. Methods allocation pure cultures.1.

2.

3.

four.

3. List the steps involved in isolating pure cultures.1.

2.

3.

four.

4. Classification nutritional Wednesdays and methods them cooking.

5. Methods sterilization. Fill in table:

No.	Way sterilization	Apparatus	Reliability	sterilizable material
1.	Sterilization in flame			
2.	Plasma sterilization			
3.	Dry heat			

4	Ferry under pressure			
5.	Fluid ferry			
6.	Tyndalization			
7.	Filtration			
8.	Physical factors (UFL, gamma rays, ultrasound)			
9.	Gas sterilization			
10	Pasteurization			

6. Give definition asepsis, antiseptics, disinfection and sterilization.

7. List chemical methods disinfection:
1.
2.
3.
4.
5.
6.
7.
8.

8. As carried out control efficiency sterilization (methods).

SELF CONTROL

1. At sterilization most quickly are destroyed the following kinds chemicalconnections in peptidoglycan bacterial cell wall:
A. Peptide;
B. Glycosidic;
C. Hydrogen;
D. Covalent.

2. For destruction prions necessary:
A. violate structure NK;
B. violate structure squirrel prion;
C. Destroy all the molecules that form the prion;
D. Destroy peptidoglycan.

3. List ways sterilization, liberating an object from spore formsmicrobes:
A. Ultraviolet irradiation;
B. Autoclaving;
C. Pasteurization;
D. Dry heat.

4. Complex measures aimed at the destruction of / in the objects of pathogenic microbes are called:
A. Asepsis;
B. Antiseptics;
C. Disinfection;
D Sterilization.

5. If means has detergent and antimicrobial properties:
A. Allowed combination disinfection and pre-sterilization cleansing;
B. Disinfection and pre-sterilization report must be carried out separately;
C. Given means can be used only for cleaning;
D. Given means maybe used only for disinfection.

6. Complex environment, containing protein and carbohydrate Components, sterilize:
A. Fractional-fluid steam;
B. Boiling;
C. Dry heat in Pasteur ovens;
D. Tyndallization;
E. Filtration;
F Chemical disinfection.

7. To physical methods sterilization relate:
A. Ultrasound;
B. Ultraviolet rays;
C. antibiotics;
D. Filtration;
E. Steam sterilization;
F. Dry heat sterilization.

8. What kind factors are used at autoclaving:
A. Temperature;
B. Filters;
C. Steam;
D. Pressure.

9. To simple Wednesdays relate:
A. MPA;
B. Peptone water;
C Blood agar;
D. Wednesday Hiss;
E. MPB.
F. Serum environment.

10. To difficult Wednesdays relate:
A. MPA;
B. Peptone water;
C Blood agar;
D. Wednesday Hiss;
E. JSA;

11. AT liquid nutritional environment height microbes maybe be observed in form:
A. colonies;
B. Diffuse haze;
C. Bottom haze;
D. parietal raid.

12. Density nutritional Wednesdays depends on content:
A. Blood serum;
B. sucrose;
C. Agar-agar;
D Peptone.

13. On height bacteria affect the following terms cultivation:
A. The content of nutrients in the nutrient medium;
B. medium pH;
C. Temperature;
D. Humidity
environment;
E. Factors growth.

14. The optimal temperature for growing most pathogens microorganisms is:
A. 20º C
B. 30º C
C. 37º C.
D 40ºC.

15. Nutrients environments on appointment divided into:
A. simple;
B. Elective;
C. liquid;

D. Differential diagnostic;

E. Transport.

16.For active transport of substances into the bacterial cellnecessary presence:

a) transcriptase
b) translocases
c) hyaluronidase
e) neurominidase
d) DNA bases

17.Process biological oxidation substrate carried out microbial cell:

a) ribosomes
b)mesosomes
c) mitochondria
d) intracellular inclusions
e) lysosomes

18.Microbes using inorganic carbon sources andchemosynthetic reactions for energy production are called:

a) photolithotrophs
b) photoorganotrophsc)
chemolithotrophs
e) chemoorganotrophs
e) true chemoorganotrophs

19.Wednesday thioglycolic serves for highlights:

a) obligate aerobes
b) obligate anaerobes
c) optional aerobes
d) facultative anaerobes
e) all answers are correct

20.Energy in microbial cage is stocking up in form:

a) UDF
b) volutin
ọ ABOVE
d) FAD
e) ATP
f) all answers are correct

21.For anaerobic cultivation use:

a) cylinders with an oxygen-free gas mixture
b) anaerostat
c) vacuum pump
d) gas plastic bag With reducing reagents
e) all answers are correct

22. Wednesdays containing Sahara and other carbohydrates, sterilize:

a) autoclaving
b) boiling
c) dry heat in ovens Pasteur

d) filtering
e) fractionally fluid ferry

23.On height bacteria affect the following terms cultivation:
a) gas composition
b) the content of organic compounds in the nutrient medium
c) growth factors
d) pH environments
e) humidity environments
f) Everybody answers wrong

24.Processes biological oxidation conjugated With reactions:
a) catabolic
b) amphibolismc)
anabolism
d) biosynthesis
e) splitting substances

25.During sterilization, the following types of chemicals are most rapidly destroyed connections in peptidoglycan bacterial cell wall:
a) peptide
b) glycosidic
c) hydrogen
d) covalent

26.Pasteurization followed by rapid cooling is carried out in the following way.mode:
a) at t one hundred FROM in flow thirty seconds
b) at t 65-95 C for 30 seconds-2 minutes
c) at t 35-55 From to current 60 minutes
d) Everybody answers true

27.For control quality sterilization apply:
a) physical and chemical tests
b) phenolphthalein test
c) biological tests
d) molecular genetic methods

28.acids How finite product metabolism source energy:
a) breathing
b)fermentati
onin) both
e) neither that, neither another

29.volatile transport vs gradient concentration
a) active transport
b) translocation of radicals
c) both
d) neither that, neither another
30.Proteolytic enzymes microbes are being studied on environments:
a) With carbs
b) With protein substrates

c) milk

d) gelatin

e) BCH

PRACTICAL OCCUPATION No. 3.

Theme: Ways allocation and identification pure cultures aerobic bacteria. Studying enzymatic activity, factors virulence and sensitivity to antibiotics allocated cultures. Peculiarities transportation material and allocation pure cultures anaerobic bacteria. Cultural and pathogenic properties mushrooms.

test control.

Necessary original level knowledge:

1. Knowledge buildings bacterial cells, chemical composition cells.
2. Main mechanisms receipts nutritional substances in bacterial cell.
3. Nitrogen and carbon nutrition.

II. Target tasks:

STUDENT MUST KNOW:	STUDENT MUST BE ABLE TO:
1. Metabolism bacteria, his kinds.	1. Carrying out bacteriological research (on scheme);
2. Breath bacteria, classification on type breathing.	2. Performance first stage allocationclean culture aerobes;
3. Methods microbiological technology.	3. Preparation of a smear, staining according to Gram.
4. Methods for cultivating aerobes andanaerobes.	
5. Methods for isolating pure cultures bacteria.	

Main literature:

1. Medical microbiology. / Under ed. acad. RAMS IN AND. Pokrovsky. - M., 2001.
2. Microbiology, virology, immunology / Under ed. A.A. Vorobyov. - M., 2004. Chapter3.
3. Microbiology, virology and immunology / Under editorial V.N. Tsareva - M., 2009.Part 1, chapter 1.
4. Management to practical classes on medical microbiology, virology andimmunology. /Under. ed. V.V. Tetza, 2002. Chapter 3.
5. Practicum of laboratory work with illustrated situational tasks on microbiology, immunology and virology / Ed. V.N. Tsareva, A.A. Vorobyov. – M.,2008.

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1. Methods laboratory diagnostics / methodical recommendations for students medical, pediatric, dental, pharmaceutical faculties, faculty higher nursing education. - Vladikavkaz, 2003.
2. Fence pathological material for microbiological, virological and serological diagnostics infections / Educational and methodical development for students higher nursing education. - Vladikavkaz, 2005.
3. Guidelines for independent work of students in microbiology / Educational and methodical recommendations. - Vladikavkaz, 2003.
4. Collection methodical developments on microbiology for students medical, pediatric, medical-prophylactic and pharmaceutical faculties / Educational methodological development, part I.- Vladikavkaz, 2008.

III. Tasks for independent extracurricular work on stated topic:

1. Describe concept metabolism bacteria.

2. Give definition:

substrate -

Catabolism -

Anabolism -

3. Characteristic enzymes bacteria and them classification.

4. Nutrition bacteria. Sources carbon:

Autotrophs -

Heterotrophs -

5. Sources nitrogen:

Prototrophs -

Auxotrophs -

6. Sources energy:

Phototrophs -

Chemotrophs

-

7. Methodology cooking smear and coloring on Gram.1.

2.

3.

four.

five.

6.

7.

8.

nine.

10.

8. I stage allocation clean culture aerobic bacteria.

SELF CONTROL
(select one or some correct answers)

1. Process biological oxidation substrate carried out microbial cell in :
A. Ribosomes;
B. Mesosomes;
C. Mitochondria;
D. Intracellular inclusions;
ELysosomes.

2. For implementation active transport substances in bacterial cagenecessary presence:
A. Transcriptases;
B. Translocases;
C. Hyaluronidase; D
Neuraminidase; E
DNAases.

3. microbes, using inorganic sources carbon and chemosyntheticreactions for energy is called:
A. Photolithotrophs;
B. Photoorganotrophs;
C Chemolithotrophs;
D. Chemoorganotrophs;
E True chemoorganotrophs.

4. By type nutrition bacteria, defiant disease at people, refer to:
A. Heterotrophs;
B. Autotrophs;
C. Prototrophs.

D. Auxotrophs.

E Hemotrophs.

5. By way receiving energy bacteria, defiant sickness in people, relate to:

A. Chemoorganotrophs;
B. Photoorganotrophs,
B. Chemoorganotrophs;
G. Photolithotrophs; D.
Hemotrophs.

6. On I stage bacteriological method research are solved the following tasks:

A. Identification clean culture microbes;
B. Determination of sensitivity to antibiotics;
C. Receipt isolated colonies;
D. Determining the type of
microbe;
E Receipt clean culture.

7. Preferential height some species microbes at simultaneous suppressionothers available on the following types nutrient media:

A. Selective (electoral);
B. simple;
C. complex;
D. Differential diagnostic;
E. Universal.

8. AT concept "cultural properties" microbe includes:

A. Character growth on nutrient media;
B. macroscopic characteristic colonies;
C. Morphology of microbial cells under microscopy;
D. Attitude pathogen to coloration on Gram.

9. On height bacteria affect the following terms cultivation:

A. Gas composition;
B. The content of organic compounds in the nutrient medium;
C. growth factors;
D. pH environment;
E. Humidity environment;
F. Everybody answers not right.

10. On I bacteriological stage method cook smear from an isolated colonies andmicroscope it for:

A. Determination of tinctorial properties of a microbe;
B. Getting clean culture;
C. Studying the microscopic characteristics of colonies;
D. studies biochemical properties microbe.

11. Enzymes in chemical relation contain:

A. Substrate;
B. coenzyme;
C. Apoenzyme;
D. Prosthetic group;
E Metabolite.

12. Main peculiarities metabolism at prokaryotes:

A. Absences typical enzymes;

B. High intensity;
C. Selection exoenzymes;
D. High permeability cellular wall and CPM for relatively major molecules.

13. High intensity metabolism at prokaryotes due to:
A. Lack of typical enzymes;
B. Enzymatic saturation;
C. Isolation exoenzymes;
D. High permeability cellular walls and CPM for relatively major molecules;
E. Optimal ratio area CPM to volume cells;
F The absence adaptive capabilities.

14. Install conformity major phases crooked growth bacterial populations and characteristics population status:
1.Lag-phase; A. Cell death exceeds the frequency of division;
2.Exponential growth; B. Adaptation to nutritional environment and conditions;
3. Stationary; B. Rapid increase in population size; 4. Withering away; G. Processes division and death cells balanced;
E. Rapid reduction numbers populations.

15. Proteolytic enzymes microbes are being studied on environments:
A. With carbohydrates;
B. MPB;
C. Milk;
D. Gelatin.

PRACTICAL OCCUPATION No. 4-5.

Theme: Bacteriophage. Genetics bacteria. Molecular genetic method diagnostics. Structure and reproduction bacteriophages. Them medical meaning. Heredity and variability at bacteria. Polymerase chain reaction and her

application .

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Target tasks: To study the material basis of heredity, forms of variabilitymicroorganisms, genetic recombination.

I. Questions for checks original level knowledge:
1. What such genetics?
2. What such gene, chromosome?
3. carriers genetic information at microorganisms?
4. Definition genome microorganisms.
5. What is material basis heredity microorganisms?

II Target tasks.

Student should know:
1. material basis heredity microorganisms
2. Forms variability microorganisms.
3. Terms occurrence variability microorganisms. Mutagens
4. genetic recombination microorganisms **.**

Student should be able to:
By cultural properties define belonging bacteria to pathogenic strains(R –S dissociation)
Explain mechanism occurrence antibiotic resistance bacteria

LITERATURE:

Main literature:
1.Microbiology With virology and immunology /Under ed. L.B.Borisova, A.M. Smirnova - M., 1994.
2.Microbiology, virology, immunology /Under ed. A.A. Vorobiev. M.-2004
3. Microbiology, virology, immunology / Ed. V.N. Tsareva - 2009 4.Manual to practical classes on medical microbiology, virology andimmunology. / Under the editorship of V.V. Tets 2002
5. Workshop of laboratory work with illustrated situational tasks for microbiology, virology and immunology. /Under the editorship of V.N. Tsareva, A.A. Vorobyeva.-M., 2008.

Additional literature:
1.Physiology microorganisms/ methodical development to practical classes ongeneral microbiology. Rostov- on - Don, 2001.
2.Guidelines published by the Department of Microbiology, Virology andimmunology FSBEI HE NOSMA Ministry of Health Russia:
General microbiology / Educational and methodological recommendations for students of medicalfaculty. - Vladikavkaz, 2004.
Collection methodical developments on microbiology for students medical, pediatric, preventive and pharmaceutical faculties / Educational andmethodological development, part 1. Vladikavkaz, 2008.
3. Medical microbiology (educational allowance) under ed. A.M. Korolyuk and

V.B.Sboychakova- SPb. 1999.
4. Microbiology for doctors under editorial A.N.Mayansky-N.Novgorod, 1998.

III. Tasks for independent extracurricular work on studied topic.

1. Continue the statement - what is transformation and what stages are distinguished in this process
……
……
……
……
……
…….

2.What kind exist forms manifestations variability microorganisms
……
……
……
……
……
……..

3. Practical meaning variability microorganisms
……
……
……
……..

4.Continue phrase mutagens this is
……
……..

SELF CONTROL
Specify correct answers:

1.What refer to extrachromosomal genetic structures?:
a) ribosomes
b) polysomes
c)plasmids
D)mesosomes
e) transposons

2. What such mutagens?
A) genes that cause mutations
B) factors defiant mutation
C) factors that transmit genetic information
D) factors that restore DNA

3. What such inversion
A) way genetic recombination

B) repair of damaged DNA sections
C) chromosomal mutation
D) point mutation

4. What such modification?
A) correction damaged plots DNA
B) phenotypic changes that do not affect the cell genome
c) transfer of genetic material fir with the help of a bacteriophage
D) hereditary spasmodic change sign

5. What such repair?
A) lysogeny
B) recovery damaged DNA
C) a method of transferring genetic information D)
viropexis

6. What such exon?
A) virulent bacteriophage
B) prophage
C) a section of a gene that carries certain genetic information
D) moderate bacteriophage

7. What such mutations?
A) correction damaged plots DNA
B) transfer of genetic material using a bacteriophage
C) hereditary spasmodic change sign
D) the process of formation of bacterial progeny containing the characteristics of the donor andrecipient

8. For conjugation characteristic:
A) transfer of genetic material using a bacteriophage
B) needed contact cells donor and recipient
C) broadcast genetic material With help RNA
D) broadcast genetic material With help sexual factor a

9. How characterized "minus" chain RNA?
A) is infectious
B) bears hereditary function
C) able to integrate into the chromosome of the
cell
D) not has function informational RNA

10. At what microorganisms material basis heredity is RNA?
A) in bacteria
B) at
spirochete
C) in RNA-containing viruses
D) in DNA-containing viruses
E) at mycoplasma

11. What such transformation?
A) recovery damaged DNA
B) broadcast genetic information at contact bacterial cells different
"sexual" focus

C) broadcast genetic information With help fragment DNA
D) the transfer of genetic information from the donor cell to the recipient cell usingbacteriophage

12. What kind distinguish forms genetic recombinations?
A) repair;
B) transformation;
C) transduction;
D) conjugation;
E) Everybody answers correct;
F) Everybody answers wrong.

13. What such transduction?
A) transfer of genetic material using a bacteriophage
B) needed contact donor cells and recipient
C) broadcast genetic material With help RNA
D) broadcast genetic material With help sexual factor a

14. What studies genetics microorganisms?
A) Ultrastructure microorganisms;
B) Issues of heredity and variability of microorganisms;
C) metabolic processes microorganisms;
D) Everybody answers correct;
E) Everybody answers wrong.

15. How characterized "a plus" strand of RNA?
A) bears hereditary function
B) able to integrate into the chromosome of the
cell
C) has function informational RNA
D) does not have the function of messenger RNAE)
Everybody the answers are correct.

PRACTICAL OCCUPATION No. 6.

Theme: Symbiosis and antibiosis. Residential and pathogenic microflora. Factors virulence microbes. Synergy and antagonism at microbes. antibiotics, mechanism actions and methods definitions sensitivity to antibiotics.
test control.

I. Questions for checks initial (base) level knowledge:

1. History discoveries antibiotics, principles receiving and applications antibiotics(research A. Fleming, G.Flory, E. Cheyna, Z. Ermolyeva, S. Waksman and others).
2. The place of antibiotics in modern medicine. Basic principles antibiotic therapy.
3. Classification on chemical building, character and mechanism antimicrobialactions, origin and spectrum action on microbial cell.
4.Demonstration antibiotics With various mechanism and spectrum actions. Principlesrational antibiotic- and chemotherapy.
5.The third and fourth stages allocation clean culture aerobes.
6.Highlight clean anaerobic cultures (continuation).
7.Dysbacteriosis, eubiotics.

8.Definition sensitivity to antibiotics method indicator disks.9.Genetic control resistance to antibiotics at bacteria.

II.Target tasks:

Student should know:	*Literature:*
• main principles antibiotic therapy; • classification of antibiotics by mechanism actions, spectrum and final result actions on microbial cell; • comparative characteristic major groups of antibiotics (penicillins, cephalosporins, macrolides, aminoglycosides, tetracyclines, chloramphenicol); • Implementation of the 3rd and 4th stages of the studyisolation of a pure culture of aerobes and anaerobes. • Sensitivity method indicatordisks.	1. medical microbiology, immunology and virology. / Ed. A.I. Korotyaeva, S.A. Babichev. - Saint - Petersburg, 1989. 2. medical microbiology, virology and immunology. / Under. ed. A.A. Vorobyov. - M., 1999, 2001 2004. 3. Medical microbiology. / Ed. acad. RAMS IN AND. Pokrovsky. - M., 2001. 4. Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykov, E.P. Pashkova, A.M. Rybakova. - M., Medicine, 2003. 5. Microbiology, virology and immunology. / Under ed. V.N. Tsareva, 2009. 6. Navashin CM., Fomina I.P. Rational antibiotic therapy. - M.,1082. 7.Yakovlev S.V., Yakovlev V.P. Brief directory on antibiotic therapy. - M.,1998. 8.Mashkovsky M.D. Medicinal funds. – M, 2000.
Student should be able to: • Define biochemical and the proteolytic activity of the isolatedclean culture. • describe characteristic sensitivityclean culture to antibiotics. • Record.	*Literature:* 1.Lab Guide microbiology. / Ed. L.B. Borisov. - M., 1984. 2.Guide to practical exercises on medical microbiology, virology and immunology. / Under. Ed. V.V. Teza, 2002.

Replenish missing knowledge will help studying special literature, specifiedhigher.

III. Tasks for independent work on studied topic:

1.Fill in table:

Characteristic sensitivity cultures to antibiotics	Diameter zones oppression growth bacteria
highly sensitive culture	
Medium sensitive	
Weak sensitive	
culture stable	

2. Fill in protocol research:

№№ p/n	researched material	results research	Graphic image

SELF CONTROL

Specify correct answers:

3. Specify antibiotic, possessing greatest anti-anaerobic activity:

a) Ampicillin
b) Gentamicin
c) Cefoperazone
d) Metronidazole
e) Ciprofloxacin

4. Principles rational antibacterial therapy are:

a) Start treatment With minimal doses antibacterial drugs
b) Initiation of antibiotic therapy after identification of the pathogen
c Accounting for the previous antibiotic therapy
d) Accounting age and accompanying pathology
e) Mandatory sampling of biomaterials for bacteriological examination beforestart treatment

5. Choose antibacterial drugs that are active against intracellularpathogens (mycoplasma, chlamydia, legionella):

a) Levofloxacin
b) Clarithromycin
c) Amoxicillin
d) Doxycycline
e) Clindamycin

6.Specify the antibiotic that is the drug of choice in the treatment of infections,caused methicillin-resistant staphylococcus aureus (MRSA):

a) Clindamycin (dalacin)
b) Metronidazole (trichopolum, flagyl)c)
Vancomycin (edicine)
d) Ampicillin/sulbactam (unazine)
e) Meropenem (meronem)

7. **Specify antibacterial a drug, inactive in relation** *Streptococcuspneumoniae* :

a) Azithromycin (Sumamed)
b) Benzylpenicillin
c) Ceftriaxone (Longacef)
d) Ciprofloxacin
e) Clindamycin (dalacin)

8. Main honors cephalosporins II generations from drugs III generationsis more high activity in relation:

a) Multiresistant Gr (–) flora
b) multiresistant Gr (+) flora

c) Anaerobic pathogens
d) Intracellular pathogens
e) Enterococci

9. Install conformity:

Indication		Drug
1. Cefazolin	B	a) High Gr.(+), Gr.(-) and anti-anaerobic activity
2. Cefuroxime	D	b) Gr.(+) Flora
3. Ceftriaxone	G	c) Gr.(-) Flora, intracellular pathogens
4. cefepime	A	d) High Gr.(-) and moderate Gr.(+) activity
5. Ciprofloxacin	C	e) Moderate Gr.(+) and Gr.(-) activity

10. On what kind four groups on origin share antibiotics:

1. animal
2. vegetable
3. microbial
4. synthetic and semi-synthetic
5. wide spectrum actions
6. antifungal
7. narrow spectrum actions
8. anti-tuberculosis

11.Bring 2 example antibiotics animal origin:

1. lysozyme
2. ecmolyn
3. gramicidin
4. polymyxin

12. Representatives of which three groups of microorganisms are producers antibiotics:

1. actinomycetes
2. mushrooms
3. bacteria
4. mycoplasma
5. rickettsia
6. spirochetes

13. Lead 2 example antibiotics produced bacteria:

1. polymyxin
2. gramicidin
3. streptomycin
4. erythromycin

14.On what kind five groups on antimicrobial spectrum actions share antibiotics:

1. current on gram-positive and gram negative cocci
2. active on majority gram-positive and Gram-negative bacteria
3. anti-tuberculosis
4. antimycotic
5. active in relation protozoa
6. intestinal
7. bactericidal
8. bacteriostatic
9. violation synthesis cellular walls

10. violating functions cytoplasmic membranes

15.Name 2 method definitions sensitivity bacteria to antibiotics:

1. method paper disks
2. method serial dilutions
3. method flocculation in agar
4. method diffusion in agar

PRACTICAL OCCUPATION No. 7.

Theme: Serological method diagnostics. Mechanisms non-specific human resistance. Phagocytosis, complement system, lysozyme, etc. Antigens and antibodies. Serological reactions: agglutination, precipitation, lysis, hemolysis and binding complement. Immunofluorescent, enzyme immunoassay and radioimmune analysis in diagnostics infectious diseases.

Motivational characteristic themes: Studying physiological mechanisms immunity. Structure, properties antigen and antibodies.

Required initial level of knowledge: Nonspecific resistance of the organismperson.

I. Questions for checks initial (base) level knowledge:

1. Non-specific factors of body protection;2.
Immune system person;
1. Immunocompetent cells, immunogenesis;
2. What such antigens?
3. What such antibodies?

II. Target tasks:

Student should know:

1. Definition immunity kinds immunity.
2. Organs immune systems person.
3. Immunocompetent cells. Immunogenesis.
4. Antigens. Gaptens. Antigens bacteria.
5. Physiological mechanisms immunity. Cooperation immunocompetent cells.
6. humoral and cellular immune answer.
7. Antibodies. Structure immunoglobulins, main classes, functions antibodies.
8. Immunological memory.
9. Immunological tolerance.

Student should be able to:

Determine the concentration of immunoglobulins of different classes in serum by the methodradial immunodiffusion according to Mancini

Literature:

Main literature:

1. Medical microbiology, immunology and virology. / Ed.2.A.I. Korotyaeva, S.A. Babichev. - St. Petersburg, 1989.
3. Medical microbiology, virology and immunology. / Under. ed. A.A. Vorobyov. -M., 1999, 2001, 2004.
4. Medical microbiology. / Ed. acad. RAMS V.I. Pokrovsky. - M., 2001. 5. Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykova, E.P. Pashkova, AM Rybakova. -M., Medicine, 2003.
6. Microbiology, virology and immunology. / Under ed. V.N. Tsareva, 2009.
7. Management to laboratory classes on microbiology. / Under ed. L.B. Borisov. - M.,1984.
8. Management to practical classes on medical microbiology, virology andimmunology. / Under. Ed. V.V. Teza, 2002.

Additional literature:

1. Brief terminological vocabulary microbiologist-biotechnologist. / Under ed. Yu.A. Ovchinnikov. - M.: An SSSR, 1989.
2. Basics medical biotechnology. /Under ed. A.A. Vorobyov. - M., 1990.
3. Nosocomial infections. / Under ed. V.P. Wenzel. - M., 1990.
4. Basics biotechnology. - SPB.: Publishing house firm "The science". - 1995.
5. Ecological immunology. /Under ed. PM Khaitova, B.V. Pinegina, H.I. Istamov.-M.: Publishing house VNIIRO, 1995.
6. Immunology for doctor. / Under ed. S.A. Ketlinskaya, N.M. Kalinina. -SPB., 1998.
7. Clinical immunology. / Under ed. A.V. Karaulova. - M., 1999.
8. Medical microbiology (textbook) / Ed . A.M. Korolyuk andV.B. Sboychakova. - SPb., 1999.
9. Microbiology for doctors / Under ed.A.N. Mayansky.-N.Novgorod., 1999.

III. Exercise for independent work on studied topic:

1. Supplement diagram:

KINDS IMMUNITY

IMMUNITY

Natural (specific) | Acquired

2. Forms immunity (transfer).
3. Fill table.

PROPERTIES ANTIGEN (describe)

antigenicity	
Specificity	

4. Fill table

Antigens bacteria	**Antigens viruses**

5. Fill table

Central bodies immune systems	Peripheral bodies immune systems

6. Fill table

GENERAL CHARACTERISTIC T- And AT - LYMPHOCYTES

T-lymphocytes	B-lymphocytes

7. Fill in the table:
Describe:

humoral immune answer	Cellular immune answer

8. Fill in the table:
Describe:

Immunological memory	Immunological tolerance

9. Fill table:

PROPERTIES IMMUNOGLOBULIN

Ig G	

Ig M	
Ig A	
Ig D	
Ig E	

10. Fill table:

TYPES ALLERGIC REACTIONS

Number type	Name type	Main mechanisms immunopathological reactions	Examples clinical manifestations
Type I	Anaphylactic		
Type II	Cytotoxic		
Type III	immunocomplex		
Type IV	Cellular		

SELF CONTROL

Specify three correct response:

1. What organs are classified as peripheral organs of the immune system?
A. thymus;
B. Thymus gland;
C. Lymphoid tissue;
D. Bone brain;
E. Spleen;
F. Lymphatic nodes.

2. What organs are classified as organs of the immune system?
A. Spleen;
B. Bone brain;
C. Lungs;
D. Lymphatic nodes.

3. What cells are classified as immunocompetent?

A. T-lymphocytes;
B. red blood cells;
C. macrophages; D.
B-Lymphocytes.
4. What cells have phagocytic activity?
A. macrophages;
B.B-lymphocytes;
CT-lymphocytes;
D. Monocytes;
E. Neutrophils.

Specify one correct answer:

5.What kind cells answer per production humoral immune answer?
A. macrophages;
B. Neutrophils;
C. T-
lymphocytes;
D. B-
lymphocytes.

6.Humoral immune answer accompanied by:
A. The production of antibodies against
antigens;
B. Cellular forms protection;
C. Phagocytosis.

7.Immunoglobulin G - this is:
A. Monomer;
B. Dimer;
C. Trimmer;
D. Pentamer.

8.What class of immunoglobulins is able to cross the placenta?
A. IgA;
B. Ig E;
C. Ig G;
D. Ig M;
E. Ig D.

9. What kind cells answer per production cellular immune answer?
A. macrophages;
B. Neutrophils;
C. T-
lymphocytes;
D. B-
lymphocytes.

10. Specific phagocytosis is manifestation which forms immune answer?
A. Humoral immune response;
B. Cellular immune answer;
C. non-specific resistance organism.

11. How many main classes of immunoglobulins are known?
A. 4;
B. 5;
C. 10;
D. 6.

12. At what diseases dominated cellular forms protection organism (T-linkimmunity)?
A. In acute bacterial infections;
B. With viral infections;
C. At bacterial infections, in pathogenesis which basic role play toxins.

13. At what diseases prevails humoral immune answer?
A. With viral infections;
B. At protozoan infections;
C. At acute bacterial infections;
D. At development antitumor immunity.

14. Antitoxic immune answer accompanied by:
A. The production of antibodies;
B. Phagocytosis;
C. Cellular cytotoxicity.

15. What class of immunoglobulins occurs in two forms: serum andsecretory?
A. Ig A;
B. Ig E;
C. Ig G;
D. Ig M;
E. Ig D.

16. Cellular cytotoxicity is manifestation which forms immune answer?
A. Humoral immune response;
B. Cellular immune answer;
C. non-specific resistance organism.

PRACTICAL OCCUPATION No. 8.

Theme: Immunoprophylaxis, immunotherapy and immunocorrection. Methods estimates human immune status: flow cytometry with monoclonal CD- antibodies, chemiluminescence of leukocytes, blast transformation of lymphocytes, etc. Immunobiological drugs: vaccines, toxoids, serum. Immunomodulators. Probiotics.

I. Questions for checks initial (base) level knowledge

1. What is a serological test? What is the difference between a serological reaction andimmunological?
2. What kind Components participate in serological reactions?
3. What such serodiagnosis?
4. What such seroindication (serotyping)?

II. Target tasks:

Student should know:	**Literature:** 1. Immunology:
•Reactions immune lysis, Components, mechanism, varieties reactionsimmune lysis •Reaction binding complement (RSK),	Textbook for studentsmedical universities / Under ed. KhaitovaR.M., Ignatieva G.A., Sidorovich I.G. - M., 2000.

Components, mechanism, goal use • Serological reactions usinglabeled antibodies or antigens (reaction immunofluorescence, enzyme immunoassay,radioimmune analysis) •Polymerase chain reaction	2. Immunodeficiency states / Ed. Smirnova V.S., Freidlin I.S. \ S-P, 2000. 3. Clinical immunology andallergology / Under ed. G. lolora- Jr., T. Fischer, D. Adelman. – M., 2000. **Main literature:** 1. Medical microbiology, immunology and virology. / Ed. A.I. Korotyaeva, S.A. Babichev. - Saint -Petersburg, 1989. 3.Microbiology with virology and immunology / Under ed. L.B. Borisov, A.M. Smirnova – M., 1994. 4.Microbiology and immunology. / Under. ed. A.A. Vorobyov. -M., 1999. 5.Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykova, E.P. Pashkova, A.M. Rybakova. - M., Medicine, 2003. **Additional literature:** 1. Clinical immunology. / Ed.A.V. Karaulova. – M., 1999. 2. Immunology for a doctor. / Ed. S.A. Ketlinskaya, N.M. Kalinina. - SPB., 1998.
The student must be able to: Set and take into account the reaction of hemolysis Put and take into account reaction binding complement Take into account the results of enzyme immunoassayanalysis, reactions immunofluorescence.	**Literature:** 1. Immunology: Textbook for studentsmedical universities / Under ed. KhaitovaR.M., Ignatieva G.A., Sidorovich I.G. - M.,2000. 1.Lab Guidemicrobiology. / Ed. L.B. Borisov. -M., 1984. 2.Guide to paktichеskih studies on medical microbiology, virologyand immunology. /Under. Ed. V.V. Teza, 2002.3. Guide to practical exercises onmicrobiology / Under ed. Lebedev - M., 1980.

Replenish missing knowledge will help studying special literature, specifiedhigher.

III. Exercise for independent work on studied topic:

1. Fill in table:

Serological reactions	Components	Mechanism	Varieties
Reactions immune lysis			

2. Fill in table:

Serological reaction	Target use	Components	Mechanism	Result
Reaction binding complement (RSK)				

3. Fill in table:

Serological reactions	Target use	Components	Label	Mechanism	Result
Reaction immunofluorescence					
ELISA analysis					
radioimmune analysis					

4. Fill in table:

Non-serological reaction	Principle method	Stages method	Advantages method
Polymerase chain reaction (PCR)			

5. Decide task:
It is known that the isolation of a pure culture of tuberculosis pathogens takes several weeks, and microscopy of the studied material is rather ineffective. What method laboratory diagnostics allows you to make a diagnosis with the highest accuracy and through several hours?
6. What kind tasks decide at serodiagnosis infectious disease?
7. Make up scheme productions direct and indirect methods reactions immunofluorescence:
Straight method:

Indirect method:

8. Draw up a scheme for setting up direct and indirect methods of enzyme immunoassay: Straight method:

Indirect method:

9. Compose scheme productions direct and indirect methods radioimmune analysis: Straight method:

Indirect method:

10.Decide task.
At carrying out enzyme immunoassay analysis With goal serodiagnosis syphilis what kindare used Ingredients?
researched material
_____contains_____
Diagnostic drugs:
1. _____contains
_____2.
_____contains_____

SELF CONTROL:

Specify one correct answer:

1.How much ingredients involved in reactions immune lysis?
A. 2;
B. 3;
C. four;
D. five.

2. What antibodies are involved in the complement fixation reaction (CFR)?
A. Agglutinins;
B. Precipitins;
C. Lysines;
D. Opsonins.

3. indicator system at staging reactions binding complement is:
A. Agglutinating;
B. Hemolytic;
C. Precipitating.

4. Who is the complement donor for CSC?
A. Rabbit;
B. Guinea pig;
C. Donor;
D. White mice.

5. How to get rabbit hemolytic serum?
A. By immunizing a rabbit with rabbit erythrocytes;
B. way immunization ram erythrocytes ram;
C. By immunizing a rabbit with ram erythrocytes;
D. way immunization ram erythrocytes a rabbit.

6. What label is used for enzyme immunoassay (ELISA)?
A. Radioisotope;
B. Enzyme (peroxidase);
C Fluorochrome.

7. Which label used at staging radioimmune analysis (RIA)?
A. Radioisotope;

B. Enzyme (peroxidase);
C Fluorochrome.

8. Which label used at staging reactions immunofluorescence (REEF)?
A. Radioisotope;
B. Enzyme (peroxidase);
C Fluorochrome.

9. What reaction is non-serological?
A. ELISA
B. RIF
C PCR
DRIA

10. What is bacteriolysis?
A. Lysis erythrocytes;
B. Lysis of bacteria;
C Lysis cells.

11. What is cytolysis?
A. Lysis of erythrocytes;
B. Lysis bacteria;
C. Lysis cells.
12. What is hemolysis?
A. Lysis of erythrocytes;
B. Lysis bacteria;
C. Lysis cells.

13. Which component in reactions binding complement counts non-specific?
A. Hemolytic serum;
B. Sheep erythrocytes;C
Complement;
D. Serum subject.

14. As receive rabbit antiglobulin serum?
A. way immunization a rabbit erythrocytes ram;
B. way immunization a rabbit human immunoglobulins;
C. way immunization a rabbit immunoglobulins a rabbit.

15. Fluorochrome-labeled antiglobulin serum is used to staging:
A. ELISA, direct method;
B. Enzyme immunoassay, indirect method;
C. Reactions immunofluorescence, direct method;
D. Immunofluorescence reactions, indirect method;
E. radioimmune analysis, indirect method.

PRACTICAL OCCUPATION No. nine.

TOPIC: Microbiological diagnosis of bacterial infections. Working offmethods diagnostics For example the following pathogens:

1. staphylo-, entero- and streptococci (bacteriological method)
2. Neisseria and mycoplasmas (microscopic method)

I. Questions for checks initial (base) level knowledge:

1. What such cocci?
2. What such staphylococci?
3. Taxonomy staphylococci: a) family; b) genus
4. causative agents what infectious diseases are staphylococci?
5. What maybe to be researched material at staphylococcal infections?

II. Target tasks:

Student should know:	**Literature:**
1. Morphology, cultural, tinctorial properties staphylococci. Enzymatic activity. 2. Factors pathogenicity and toxins. Them role in pathogenesis staphylococcal infections. 3. Main diseases calledstaphylococci. 4. Pathogenesis, features of immunity in staphylococcal infections. Sources and way transmission of infection. 5. Principles microbiological diagnostics, the main method research, scheme classification isolated pure culture. Phage typing. 6. specific prevention and therapy staphylococcal infections.	**Main literature:** 1. Medical microbiology, immunology and virology. / Ed. A.I. Korotyaeva, S.A. Babichev. - Saint -Petersburg, 1989. 3.Microbiology with virology and immunology / Under ed. L.B. Borisov, A.M. Smirnova – M., 1994. 4.Microbiology and immunology. / Under. ed. A.A. Vorobyov. -M., 1999. 5.Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykova, E.P. Pashkova, A.M. Rybakova. - M., Medicine, 2003. 6. Medical microbiology. / Undered. acad. RAMS V.I. Pokrovsky. – M., 2001. **Additional literature:** 1. Clinical immunology. / Ed.A.V. Karaulova. – M., 1999.
Student should be able to:	**Literature:**
1. Carry out bacteriologicalstudy (according to the scheme). 2. Keep records and interpretresults. 3. cook smear and coloring on Gram. 4. light microscopy drugs frompure cultures of staphylococci.	1. Lab Guidemicrobiology. / Ed. L.B. Borisov. - M., 1984. 2. Guide to practical exercises on medical microbiology, virology and immunology. /Under. Ed. V.V. Teza, 2002. 3. Guide to practical exercises onmicrobiology / Under ed. Lebedev - M., 1980.

Replenish missing knowledge will help studying special literature, specifiedhigher.

III. Tasks for independent work on studied topic:

1. To give microscopic characteristic morphology staphylococcus in smear from cleanculture

_____

2. Staphylococci on type breathing relate to_____

3. source infections at staphylococcal infections are:

_____

_____

4. Ways transmission staphylococcal infections:_____

_____

5. What media are used for bacteriological diagnosis of staphylococcal infections._____

_____

6. Fill in table:

sign	S. aureus	S. epidermidis	S. saprophyticus
Plasmocoagulase			
Anaerobic fermentation mannitol			
DNAase			
Sensitivity to penicillin			
Role in pathology human			

7. Fill in table major nosological forms staphylococcal infections:

Forms diseases	**Material for research**
LOCAL Purulent defeat skin (boils,carbuncles, abscesses, phlegmon)	
Mastitis	
Angina, tonsillitis	
Pneumonia, bronchopneumonia	
Arthritis	
Conjunctivitis	
infections urinary ways	
food poisoning	
GENERALIZED Sepsis Endocarditis	
Meningitis	
Hemotogenic osteomyelitis	
Syndrome toxic shock	

8. Decide task:

a) A patient has a chronic staphylococcal infection. What methodlaboratory diagnostics most effective in this case?

_____

_____

_____

____

9. List factors pathogenicity staphylococci:

_____

_____

_____

____

10. Enzymes aggression staphylococci:

1. _____2._____

3.4 _____.

_____

Describe main toxins, allocated staphylococci:

_____

_____

_____

PRACTICAL OCCUPATION No. 10.

TOPIC: Microbiological diagnostics bacterial infections. Working offmethods diagnostics For example the following pathogens:

1. corynebacteria, actinomycetes, listeria (microscopic andbacteriological methods)

2. anaerobic bacteria (microscopic, bacteriological methods)

I. Questions for checks initial (base) level knowledge:

1. Taxonomy pathogens diphtheria, whooping cough and parapertussis.
2. Morphology, cultural, biochemical antigenic properties of pathogens:diphtheria, whooping cough, parawhooping cough.
3. Methods laboratory diagnostics pathogens diphtheria, whooping cough parapertussis.
4. Preparations for specific prevention, diagnostics and treatment .

II. Target tasks

Student should know:	**Main literature:**
1. Taxonomy, morphology, cultural properties - corynobacteria diphtheria, whooping cough and parapertussis. 2. Main laboratory methods diagnostics: bacteriological,express methods, bioassay,serodiagnosis. 3. Treatment and prevention, epidemiology.	1. Microbiology, virology and immunology /Under redu Tsareva V.N.- Moscow, 2009. S. 272-281 2. Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykova, E.P. Pashkova, A.M. Rybakova. - M., Medicine, 2004. 3. Medical microbiology. / Ed.acad. RAMS IN AND. Pokrovsky. - M., 2001. 4. Microbiology with virology and immunology / Under ed. L.B. Borisov, A.M. Smirnova – M., 1994.

Student should be able to:	Additional literature
1. Microscopic immersion system, draw drugs. 2. Put reaction on Ouchterlony. 3. Record the reaction and makeconclusion.	1. Workshop laboratory works With illustrated situational assignments in microbiology, immunology and virology./ Under. ed. A.A. Vorobiev, V.N. Tsareva. M., 2008. 2.Guide to practical exercises on medical microbiology, virology and Immunology./Under ed. V.V. Teza, 2002. 3. Lab Guide Microbiology./Under ed. L.B. Borisov.-M., 1984.

Replenish missing knowledge will help studying special literature specifiedhigher

III. Tasks for independent work on studied topic:

1. At which nosology define toxigenicity on Ouchterlony

_____

_____

_____

____

2. Fill table:

PROPERTIES	Gravis	Mitis	Intermedius	Belfanti
Cultural properties				
Biochemical properties				
Antigenic structure				
Factors pathogenicity				

3. List way transmission diphtheria:_____

_____

4. Disease diphtheria are called:
a) toxigenic strains;
b) non-toxigenic strains;
C) and topics and others

5. Which type breathing corynobacteria diphtheria:
a) fermentation;
b) respiratory;
c) mixed

6. Histotoxin is synthesized toxigenic or non-toxigenic strain?_____

7. Describe the method of inoculation of the test material in the diagnosis of whooping cough andparapertussis:

_____
_____
_____
_____
_____
_____

8. Enter in table distinctive signs pathogens whooping cough and parapertussis

Properties	Bordetella pertussis	Bordetella parapertussis
Cultural properties		
Antigenic structure		
Factors pathogenicity		
Biochemical properties		

9. grains volutin define on method:
1) Gram;
2) Neisser;
3) Ozheshko;
4)Storms
Guinsa

10. In the formation of antidiphtheria immunity , the leading role belongs_____

SELF CONTROL

1. What form maybe have pathogen diphtheria? (select one correctanswer)
A. coccoid
B. Polymorphic rods
C. Curly (2-3 curls)
D. branching

2. Microscopy pathogen diphtheria carry out: (select one correctanswer)
A. When stained according to Ziehl -
Nelsen
B. AT dark field vision
C. When stained according to
Neisser
D. negative way

3. By type breathing clostridia: (select one correct answer)
A. obligate anaerobes
B. Optional anaerobes
C. obligate aerobes
D. Facultative aerobes
E Microaerophiles.

4. The sequence of stages of bacteriological research method fordiphtheria:
A. Definition toxicity
B. Sowing researched material on special environments
C. Studying biochemical properties
D. Reseeding colonies for receiving clean culture.

5. Toxicity diphtheria sticks define With help reactions: (selectone correct answer)
A. Agglutinations on glass
B. Hemagglutination
C. Ring precipitation
D. precipitation in gel

6. Name the main methods of microbiological diagnosis of diphtheria:(select two correct answers)

A. Microscopic
B. Biological
C. Bacteriological
D. Allergic

7.Methods microbiological diagnostics whooping cough (select two correctanswer)
A. Bacterioscopic
B. Bacteriological
C. Allergic
D. Serological

8. What morphological structures does the causative agent of diphtheria have?(select one correct answer)

A. Agglutinations on glass
B disputes
C. saws
D. flagella
E. grains volutin

9. Make up brain teaser couples: question answer

1. split urea	A. Pathogen diphtheria
2. Not possess cystinase	b. Conditionally pathogenic corynebacteria
3. Not have urease	B. Both
4. Work out cystinase	G. Neither then, not other

10 **. Describe move research at diphtheria**

1. 1 stage	A. Reseeding suspicious colonies on folded serum
2. 2 stage	B. Seeding material on Wednesday Clauberg
3. 3 stage	B. Identification dedicated clean culture

PRACTICAL LESSON No. 11

TOPIC: Microbiological diagnostics bacterial infections. Working offmethods diagnostics For example the following pathogens:
1. pathogens intestinal infections (bacteriological, serological methods)
2. pathogens STI (serological, molecular biological methods)

I. Questions for checks initial level knowledge:

1. concept taxonomies microorganisms.
2. Ways transmission infections.
3. Definition pathogenesis.
4. What such factors pathogenicity microorganisms?
5. difference pathogenic microorganisms from conditionally pathogenic.
6. Principles laboratory diagnostics, treatment and prevention infectiousdiseases.

II. Target tasks:

Student should know: 1. classification, morphology, cultural E properties. coli. 2. Antigenic structure, factors pathogenicity. 3.Principles microbiologicaldiagnostics, basic methods research. 4. Pathogenesis, peculiarities immunity. 5. Epidemiology, routes of entry andsources prevention and therapy.	**Special literature:** 1. Microbiology, virology andimmunology. / Under. editorial V.N.Tsareva Moscow - 2009 2. Accelerated methods diagnostics infectious diseases. / Under editorial prof. V.M. Nikitin Kishinev -1974 3. Intestinal infections in young children age. / Ed. G.A. Kharchenko, A.V. Burkina Rostov - on - Don Phoenix2007 **Main literature:** 1.medical microbiology, virology and immunology./ Under editorial academician A.A. Vorobyov. Moscow – 2004. 2. Medical microbiology, virology and immunology./ Under editorial A.I. Korotyaeva, S.A. Babichev. -St. Petersburg, 1989 3. Microbiology With virology and Immunology / Under ed. L.B. Borisov, A.M. Smirnova - Moscow – 1994 4. Microbiology and virology and immunology. / Ed. A.A. Vorobiev, A.S. Bykov , E.I. Pashkova, A.M. Rybakova - Moscow Medicine - 2003. 5. Medical microbiology, virology and immunology. / Under ed. Acad. RAMS V.I. Pokrovsky- M. - 2001 **Additional literature** 1. infectious illness. /Under editorial E.P. Shuvalova Medical microbiology. Und er editorial acad. V.I. Pokrovsky, prof. OK. Pozdeeva. 2. Accelerated methods diagnostics infectious diseases. / Under editorial prof. V.M. Nikitin Kishinev -1974 3. Intestinal infections in young children age. / Ed. G.A. Kharchenko, A.V. Burkina.
Student should be able to: 1.Conduct bacteriological methodresearch (according to the scheme).	1.Medical and sanitary microbiology. / Under editorial A.A. Vorobyov, Yu.S. Krivonein, V.P.

2.Cooking smear, coloring on Gram.3. Identify microorganisms intestinal groups	Shirobokov 2nd edition Moscow – 2006 1. Practice Guide on medical microbiology. /Under editorial M.N. Lebedeva Moscow - 1978 2. Practice Guide on medical microbiology, virology and immunology. / Underedited by V.V. Teza Edition second, revised and expanded Moscow - 2002 year.

Replenish missing knowledge will help studying special literature, specifiedhigher.

III. Tasks for independent work on studied topic.

1. Add antigenic structure E. Coli:

1. type-specific antigen- _____;
2. Surface - _____antigen sensitive to temperature;
3. _____antigen defining serogroup

2. Highlight Class immunoglobulin at EICP at children 1 of the year life participating in passive transplacental immunity:

Iq A
Iq G
Iq D
Iq M
Iq E

3. Fill in table

decipher	Mechanism pathogenic actions With superficial intestinal epithelium
ETCP	
EICP	
EPKP	
EGKP	

4. Specify at intestinal ischerichiosis produced local immunity;Iq AND secretory

Iq E
Iq D
Iq AND humoral

5. Specify biochemical peculiarity EGKP ability produce enzyme E.

Coli O157:H7;
a) B-D-galactosidase;
b) Lecithinase;
in) DNAase;
G) B-D- glucuronidase

6. Specify E. Coli serotype - released in the 1st year of life of children and producingshiga-like toxin O55, O111, O113, O26 , O18, O124, O114, O152

_____

7. E. Coli: cultural properties:
Levina colonies _____;
Ploskereva _____;
Poppy- Konki _____;
Asel-Lieberman _____;

8. From listed microorganisms lactose ferment:
1) E. coli O124; 3) S. flexneri;
2) S. sonne; four) S. typhimurium

9. For allocation enteropathogenic intestinal sticks are held sowing bowel movements:
1. on Wednesday Endo; 3. Ploskereva;
2. Bismuth sulfite agar; four. Alkaline agar;

10. For identifying O antigen Escherichia in RA previously necessary:
1. extract O antigen acetone;
2. destroy In and - antigen boiling;
3. destroy To - antigen boiling;
4. Neutralize In and - antigen serum

PRACTICAL OCCUPATION No. 12.

TEST CONTROL.

FEDERAL STATE BUDGET EDUCATIONAL INSTITUTIONHIGHER EDUCATION
"NORTH OSSETIAN STATE MEDICAL ACADEMY»
MINISTRIES HEALTH RUSSIAN FEDERATION

DEPARTMENT MICROBIOLOGY

COLLECTION METHODOLOGICAL DEVELOPMENT ON MICROBIOLOGY, VIROLOGY, IMMUNOLOGY-MICROBIOLOGY OF ORAL CAVITY FOR INDEPENDENT WORK OF STUDENTSDENTAL FACULTY

SPRING SEMESTER

Vladikavkaz

Author: assistant professor, PhD Chertkoeva M.G.

Main appointment developments - methodical help students to to each practical occupation in spring semester. Directions drawn up in accordance With Federal public educational standard Supreme and vocational education.

REVIEWERS:
L.V. Bibaeva – MD, Professor, head department biology and histology FSBEI HE NOSMA Ministry of Health Russia.

A.R. Kusova- MD, Professor, head department of hygiene and physical education FSBEI HE NOSMA Ministry of Health Russia.

PRACTICAL OCCUPATION No. 1.

Theme: Microbiological diagnostics viral diseases. Indication and identification viruses in researched material. Serological method diagnostics viral diseases: reactions neutralization, passive hemagglutination, ELISA. Working off methods diagnostics on example viraldiseases:
- cultivation in chicken embryo, colored try, hemagglutination and braking hemagglutination at identification viruses influenza and SARS;
-serological tests and polymerase chain reaction in the diagnosis of viral hepatitis B, C, herpes, HIV.

I. Questions for checks initial level knowledge:

1. Definition viruses, them structure and classification
2. Why viruses are intracellular parasites?
3. What kind exist methods cultivation viruses?
4. AT how difference between methods indications and identification viruses?
5. What kind exist methods identification viruses?
6. What kind you you know methods laboratory diagnostics viral infections?
7. name principles prevention and treatment viral infections.

II. Target tasks:

Student should know:	**Literature:**
1. Biological properties viruses influenza, parainfluenza, measles, epidemic mumps, rubella, natural smallpox, wind smallpox, coxsackie, echo,adenoviruses 2. Pathogenesis and clinical picture diseases, caused studied viruses 3. Methods laboratory diagnostics diseases, caused studied viruses 4. Principles prevention and treatment diseases caused considered viruses	1. Flu - way solutions Problems. Kamyshentsev M.V., Stefanov V.E. - St. Petersburg, 2002. 2. Influenza and other acute respiratory infections diseases. Deryagin Yu.P. - "Felix" 2006. **Main literature:** 1. Medical microbiology. / Under ed. acad. RAMS V.I. Pokrovsky. – M.,2001. **2.** Microbiology. / Under. Ed. A.A. Vorobiev, A.S. Bykova, E.P. Pashkova, A.M. Rybakova. - M., Medicine, 2003. **Additional literature:** 1. Flu. Benefit for doctors. SmallV.Kh., Sologub T.V. - St. Petersburg - Kharkov, 2007
Student should be able to:	**Literature:**
1. Take into account the results of the braking reaction hemagglutination, delivered With goalserodiagnosis influenza 2. Take into account results reactions immunofluorescence, delivered With goal seroidentification virus influenza 3. Estimate cytopathic action virus influenza in culture cells Hella	1.Flu - way solutions Problems. Kamyshentsev M.V., Stefanov V.E. - St. Petersburg, 2002. 2.Influenza and other acute respiratory infections diseases. Deryagin Yu.P. - "Felix" 2006. 3. Practice Guidein medical microbiology, virology and immunology. /Under. Ed. V.V. Teza, 2002.

Replenish missing knowledge will help studying special literature, specifiedhigher.

III. Tasks for independent work on studied topic:

1. Specify correct answers:

1. Influenza viruses belong to the family
a) coronaviruses
b) adenoviruses
c) paramyxoviruses
d) orthomyxoviruses

2. Measles virus by structure
a) simple virus
b) complicated virus
c) It has supercapsid
d) does not have a
supercapside) It has
nucleocapsid

3. For specific prevention epidemic mumps use:a) DTP
b) BCG
c) a live vaccine received by Smorodintsev A.A. and
collaborators
d) rimantadine

4. Virus avian influenza applies to:
a) to the influenza virus
type C
b) to the influenza virus
type A
c) to the influenza virus
type B
d) to virus influenza type D

5. Which type nucleic acids contains virus wind smallpox?
a) RNA
b) DNA
c) DNA and RNA
d) not contains nucleic acid

6. For virus natural smallpox characteristic:
a) RNA-containing virus
b) DNA-containing virus
c) simple virus
d) complicated virus
e) contains hemagglutinin
f) not contains hemagglutinin

7. For diagnostics natural smallpox use:
a) detection of Guarnieri bodies in the cytoplasm of affected cells
b) detection calf Babesha Negri in affected cells
c)RTGA
d) RSK
e) reaction precipitation

8. Viruses parainfluenza include:

a) to the genus
Paramyxavirus

b) to the genus
Lyssavirus

c) to the genus
Pneumovirus

d) to kind
Morbillivirus

2. Give brief characteristic viruses flu:

Shape _____

_____

Dimensions _____

_____

Availability supercapsid_____

Type nucleic acids_____

_____

Antigens _____

_____

Hemagglutinin _____

_____

Neuraminidase_____

3. Reply on questions:

Methods cultivation viruses influenza_____

_____

Localization viruses influenza in body human_____

_____

A source infections_____

_____

Ways transmission_____

Pathogenesis influenza_____

_____

_____

_____

_____

4. List drugs for etiotropic therapy flu:

_____

_____

_____

_____

_____

_____

5. name drugs for specific prevention flu:

_____

_____

_____

_____

_____

6. Immunofluorescence reaction as a method for express diagnostics of influenza:
researched material
__Diagnostic a drug_____

7. Write down step by step virological method diagnostics flu:

_____
_____
_____
_____
_____

8. Give brief characteristic adenoviruses:
Shape _____
_____Siz
e _____
_____Av
ailability supercapsid_____
_____Ty
pe nucleic acids_____
Antigens _____
_____Pr
esence serovars and serotypes_____
_____M
ethods cultivated_____
_____Lo
calization in body human_____
_____A
source infections_____
Ways transmission_____
Clinical forms adenovirus infections_____

---

9. laboratory diagnostics adenovirus infections:
1. RIF - as a method of rapid diagnosis of adenovirus infections: researched material
___Diagnostic a drug_____
2. Cytoscopic method:
Principle method_____
_____
_____
_____

10. Give brief characteristic viruses parainfluenza:
Shape _____
_____Siz
e _____
_____Av
ailability supercapsid_____
_____Ty
pe nucleic acids_____
_____An
tigens _____

Presence serovars and serotypes

Methods cultivation

Localization in body human

A source infections

Ways transmission

Clinical forms parainfluenza infections

11. Give brief characteristic viruses coxsackie and ECHO:

The form

Size

Availability supercapsid

Type NK

Antigens

Presence serovars and serotypes

Methods cultivation

Localization in body human

A source infections

Ways transmission

Clinical forms

PRACTICAL OCCUPATION No. 2.

Theme: Infectious control in dentistry. Disinfection, pre-sterilization treatment and sterilization tools, materials, equipment. Antiseptics and disinfectants. Ways fence material for researches from an oral cavity (for microbiological researches). Modern methods clinical immunology and molecular genetics.

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Symbiosis, stages symbiosis.
2. Cavity mouth How ecological niche organism.
3. Main representatives resident microflora cavities mouth, them properties.
4. Features of the sampling of the test material from the oral cavity (oral fluid, dental plaque, contents of the gingival groove, periodontal pocket, carious cavity, root channels and etc.).
5. Mechanisms formation microbial associations in cavities mouth.
6. fickle microflora cavities mouth.
7. Mechanisms resistance current in cavities mouth.
8. Lysozyme and other bactericidal factors in oral liquids.
9. Secretory immunoglobulins class AND. Characteristic, them role.
10. Microbiocenosis cavities mouth.
11. Mechanisms coaggregation bacteria.

12. Peculiarities composition microflora in various biotopes cavities mouth.

MAIN LITERATURE:

1. V.N. Tsarev. Microbiology, virology and immunology. Moscow, 2009 With. 543.
2. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
4. V.V. Tez. Guide to practical exercises in microbiology, virology and immunology. Moscow, 2002
5. L.Ya. Plakhtiy, A.Ch. Tskhovrebov. Textbook on microbiology of the oral cavity. Vladikavkaz, 2006.

ADDITIONAL LITERATURE:

1. L.Ya. Plachtius, V.N. Tsarev. Microbiological and molecular genetic justification applications antibiotics in periodontics. Moscow, 2007 G. With. 180.
2. V.N. Tsarev, L.Ya. Plachtius. clinical, bacteriological, laboratory methods diagnostics and strategy antibacterial therapy generalizedperiodontitis. Moscow, 2008 With. 74.
3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry.Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORKS ON STUDYED TOPIC:

1. What kind peculiarities fence researched material from cavities mouth?

_____

_____

_____

_____

2. sketch in form schemes morphology major residents cavities mouth:

1) anaerobic gram-positive (Peptostreptococcus, actinomycetes, propioni- and eubacteria) and gram negative (veillonella, bacteroids, fusobacteria, tortuous forms);

2) aerobic and facultative anaerobic gram-positive (streptococci, staphylococci, Korine- and lactobacilli) and gram negative (neisseria, pseudomonas),

SELF CONTROL:

Question.	**Options response:**

1.	**to aerobic bacteria relate:**	a - having enzymes hyaluronidase and peroxidase b - not having enzymes superoxide dismutase and oxidoreductase in - having enzymes superoxide dismutase and oxidoreductase G - not having enzymes hyaluronidase and peroxidase
2.	**quantitative ratioresidents in the environmental niche defined:**	a - the presence of factors among residents invasiveness b - the presence of factors among residents infectivity c - the state of the body's defensesG - toxigenicity of residents
3.	**After teething incavities mouth appears significant number:**	a - neisseria and hemophilusb - bacilli and Clostridium in - lactobacilli and corynebacteriaG - bacteroids and tortuous forms

four. **Sample structure microbiocenosis cavities mouth:**

a - staphylococci - ½, streptococci - ¼, diphtheroids - ¼
b - streptococci - ½, veillonella - ¼, diphtheroids - ¼
in - bacteroids - 1/3, veillonella - 1/3, streptococci – 1/3
d - staphylococci - ¼, E. coli - 1/8, diphtheroids - ¼, streptococci - ¼, veillonella – 1/8

five. **As part of the microflora of childrendominate:**

a - bacteroids, fusobacteria and actinomycetes b - lactobacilli, neisseria and corynebacteriac - bifidobacteria, spirochetes and staphylococciG - bacilli clostridia and spirilla

6. **For the gingival trough and lacunae mucous membranes are characteristicthe following representatives normal microflora:**

a - microaerophilic streptococci, neisseria, staphylococci
b - bacteroids, prevotella, actinomycetes, fusobacteria
c - rotia, hemophils, acinetobacteria and mushrooms
d - Escherichia coli, Pseudomonas aeruginosa, bordetella

7. **By type breathing bacteroids:**

a) obligate anaerobes
b) optional anaerobesin)
obligate aerobes
d) facultative aerobese)
microaerophiles

8. **The toxicity factor in S. sanguis is:**

a - Availability pili and pili
b – the presence of adhesins and coaggregation factors withothers bacteria
in - Availability capsules
G - Availability alpha- or beta hemolysins

nine. **Match toxin formation and groupsanaerobes:**

a - forms exotoxin b - forms endotoxin
in - forms disputes
G - not forms disputes

1. Bacteroides
2. Clostridium
3. Peptococcus
4. Fusobacterium

10. **Match called infections and kindpathogen:**

a – tetanus
b - gas gangrenein – candidiasis
G - fusospirochetosis

1. Candida albicans
2. Clostridium tetani
3. Fusobacterium nucleatum
4. Clostridium novyi.

PRACTICAL OCCUPATION No. 3.

Theme: Sterilization and disinfection. Ways sterilization and disinfection laboratory crockery and medical tools. Peculiarities sterilization and pre-sterilization processing dental tools, hog, tips turbines etc .

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Features of microscopic, bacteriological and serological methodsresearch at diagnostics dental diseases.
2. Modern methods sterilization and disinfection in dentistry (ultrasound, UVgamma rays, laser)
3. rules precautions from infections infectious diseases on admission atdentist.
4. Instructions and normative the documents on disinfection and sterilization in dentistry.

MAIN LITERATURE:

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2. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
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3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry. Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORKS ON STUDYED TOPIC:

1. Fill table:

Table 1.

Characteristic methods sterilization in dentistry

	Method	Apparatus	Mode	Reliability and testimony	Objects sterilization
1.	Ferry under pressure				
2.	Dry heat				

3.	Gas sterilization.				
four.	Chemical sterilization.				
five.	Ultrasound.				
B.	uv and gamma rays				
7.	laser				

2.Fill table:

Methods and means of disinfection of various products (objects) medical and other purposes, after service (surveys) AIDS patient

Table 2.

No.	**product name (object)**	**Disinfectantagent**	**Concentration r-ra in %**	**exposition in min.**	**Way processing**
1	2.	3.	four.	five.	6.
1.	Surface laboratory tables				
2.	pipettes, test tubes, melangeurs, subject and coverslips glass, swollen electrophoresis, cook plates, glasses, etc. laboratory products (glass)				
3.	syringes, needles, probes, catheters				
four.	Mirrors (dental, guttural, nasopharyngeal				

five.	Waste blood (clumps blood, serum.				
6.	Spatulas wooden metallic e				

pasteurization followed by rapid cooling is carried out innext mode:

a) at t 100C in flow thirty seconds
b) at t 65-95C in flow 2-30 minutesin) at t 35-55C in flow 60 minutes G) Everybody the answers are correct

1. **If means has detergent and antimicrobial properties, then:**

a) allowed combination disinfection andpre-sterilization clean-ups
b) disinfection and pre-sterilizationcleaning must be carried out separately
in) given means maybe used onlyfor cleaning
G) given means maybe used onlyfor disinfection

2. **Position in the correct sequences sequence processes:**

a) pre-sterilization cleaning → sterilization
b) pre-sterilization cleaning → sterilization → disinfectionin) pre-sterilization cleaning → disinfection → sterilization
d) disinfection → pre-sterilizationcleaning → sterilization

3. **When disinfecting products medical purpose boiling in distilled water with 2% sodium bicarbonate(soda) exposition is:**

a) at least 5 minutes
b) not less 10 minutes
c) at least 15 minutes
G) not less 40 minutes

four. **For disinfection of products metals contaminated bacteria tuberculosis use:**

a) five% solution chloramine, time exposure 240 minutes
b) 3% solution chloramine, time exposure 60

		minutes in) 1% solution chloramine, time exposure thirty minutes
five.	**Sterilization is complex activities directed on:**	a) destruction at facilities of specific types microbes b) prevention hits microorganismsin wound in) complete desolvation objects from all species microbes G) destruction virulent species microbes
6.	**To reduce the likelihood toxic and toxic-allergic reactions in personnel preferable use disinfection by:**	a) irrigation b) diving in) aerosol processing
7.	**Install conformity morphologyand coloring with a group of anaerobic bacteria:**	a - spore-forming Gram+ sticks b - non-spore-forming Gram+ sticks in - non-spore-forming Gram+ cocci G - non-spore-forming Gram- sticks
		1. Clostridia. 2.Peptostreptococci 3. Eubacteria. 4. Bacteroids.
8.	**Match called infections and kindpathogen:**	a – tetanus b - gas gangrenein – candidiasis G - fusospirochetosis
		1. Candida albicans 2. Clostridium tetani 3. Fusobacterium nucleatum 4. Clostridium novyi.

PRACTICAL
ACTIVITY # 4-5.

Topic: Microbiocenosis of the oral cavity. Resident microflora of various biotopes oral cavity. Plaque and its study in assessing the hygienic condition oral cavities.

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Peculiarities microflora cavities mouth at caries teeth.
2. dental plaque. Mechanism her formations. Localization.
3. Streptococcus mutans and his role in occurrence caries.
4. experimental confirmation roles microbes in development caries.
5. Role local factors resistance at caries. Vaccine for caries prevention .
6. Features of sampling material from the carious cavity forbacteriological method research.

MAIN LITERATURE:

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2. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
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TASKS FOR INDEPENDENT WORKS ON STUDYED TOPIC:

1. The method of sampling material for caries for the bacteriological methodresearch.

_____
_____
_____
_____
_____
_____
_____

2. Microflora at caries.

_____
_____
_____
_____
_____
_____

3. The role of microflora in the emergence and developmentcaries.

_____
_____
_____
_____

SELF CONTROL

	Question	Options answers.
1.	**Antagonists cariogenic bacteriaare:**	a - rotia and actinomycetes b - bacteroids and spirochetes in - lactobacilli and bifidumbacteriaG – Neisseria and veillonella
2.	**Cariogenic action bacteria in nocturnal time implemented thanks to:**	a - the presence of cell wall lectinsb – products polymerase in – synthesis glycans G - education capsules
3.	**aerobic bacteria,being antagonists cariogenic flora can think:**	a - Neisseria b - veillonella c - Haemophilus influenzae G – fusobacteria
4	**The main factor infectivity in Str. mutans is:**	a - education hemolysin b - adhesins cellular walls in - dextrans, produced at recyclingsucrose G – dairy acid
5	**According to the WHO group cariogenic microbes includes:**	a - S. mutans, S. sanguis, lactobacterium, Actinomyces b - S. sanguis, Fusobacterium, actinomyces, E. corrodens in - S. mutans, S. sanguis, bacteroides, R. dentocariosa, Neisseria G - lactobacterium, Bifidobacterium, Propionibacterium
6.	**From point of view the occurrence of caries antagonists are:**	a - streptococci and veillonella b - streptococci and actinomycetesin - streptococci and bacteroids G - mushrooms and spirochetes
7.	**What kind bacteria oral microbiocenosis and why considered a factor cariogenicity?**	a - neisseria, because dispose of oxygen andreduce redox potential b - veillonella, because dispose of acids and increase pH in - lactobacilli, because slow down reproduction streptococci G - corynebacterium, because synthesize vitamin TO, necessary for breeding anaerobes

8.	**Factors non-specific resistance oralliquids are:**	a - circulating immunoglobulinsb - secretory immunoglobulins c – salivary myeloperoxidaseG – T-lymphocytes
9	**Transformation?**	a. transfer of genetic material through contactbacterial
10.	**Transduction?**	cells of different "sexual" orientation b. recovery damaged DNA c. transfer of genetic material through highly polymerized DNA d. transfer of genetic material through moderate bacteriophages

PRACTICAL OCCUPATION No. 6.

Theme: Periodontopathogenic microflora. Microbiological methods study microflora at diseases periodontal. Tactics antibacterial therapy anaerobic infections maxillofacial area. ***test control***

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Methods study quantitative and quality composition microflora gingivalgroove and periodontal pockets.
2. Main representatives resident microflora at absence pathology fabricsperiodontal.
3. Peculiarities composition microflora at gingivitis.
4. Peculiarities composition microflora at periodontitis.
5. "Parodontopathogenic" microbes (Porpyromonas gingivalis, Prevotella melaninogenicus, Actinomyces naeslundii). Proof them participation in pathogenesis diseases.
6. Immunological changes (general and local) occurring in response tobacterial antigens and toxins.
7. Modern methods treatment diseases periodontal in accordance With lastscientific data.

MAIN LITERATURE:

1. V.N. Tsarev. Microbiology, virology and immunology. Moscow, 2009 With. 543.
2. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
4. V.V. Tez. Guide to practical exercises in microbiology, virology and immunology. Moscow, 2002
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3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry. Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORK ON STUDYED TOPIC:

1. Methodology fence researched material from gingival groove and pathological gingival pockets for microscopic and bacteriological methods research.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

SELF CONTROL

	Questions:	Options answers:
1.	**Representatives obligate anaerobicoral bacteria are:**	a - streptococci groups "sangvis", corynebateria and rotia b - enterococci, actinomycetes and lactobacilli c - prevotella, porphyromonas, spirochetes and fusobacteria d - staphylococcus, Pseudomonas aeruginosa and intestinalsticks
2.	**diseases, direct causewhich are resident microbes,are called:**	a - toxicoses b - infectious diseasesin - mixed infections G - opportunistic diseases
3.	**specific factorsprotections in force oral fluid are:**	a - lysozyme and myeloperoxidase b - Components complement and properdinin – granulocytes and fibroblasts G - sIgA
4	**Qualitative composition associations of residents in various plots organism defined:**	a - presence enzymes aggressionb - products exotoxins in - conditions a habitat in givenniche G - presence endotoxins

5	**Main method surveys dental patient:**	a) x-rayb) clinical c) cytologicalG) laboratory
6.	**Group antibiotics macrolides are used fortreatment:**	a – candidiasis cavities mouth b - leptotrichiasis of the mucosain – periodontitis G - returnable aphthous stomatitis
7.	**With bacteriological the study of purulent exudate in odontogenicphlegmon and abscesses most often stand out:**	a - Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pyogenes b – Lactobacillus brevis, Bifidobacterium spp., Candida kefiri in - Escherichia coli, Bacteroides fragilis, Pseudomonas aeruginosae G –Prevotella melaninogenica, Fusobacteriumnucleatum, Peptostreptococcus anaerobius
8.	**When transporting material from a patient suspicion on anaerobicinfection is necessary observe the following requirements:**	a - place the material in the transport mediumand deliver to chilled able b - place material in nutrient medium anddeliver at a temperature 37 ^{about} FROM c - place the material in a dry, sterilebottle With anoxic gas mixture d - place the material in a nutrient mediumco stimulants growth anaerobes

PRACTICAL OCCUPATION No. 7.

Theme: Studying microflora purulent detachable at inflammatory diseases maxillofacial areas. Technics anaerobic cultivation bacteria With quantitative accounting. Ways identification and definitions sensitivity anaerobes to antibiotics.

QUESTIONS FOR SOURCE CHECK (BASIC) LEVEL KNOWLEDGE:

1. Features of the sampling of for microscopic the test material andbacteriological research.
2. Peculiarities composition microflora at non-specific lesions mucous cavitiesmouth (cheilitis, glossitis, stomatitis), causes them occurrence.
3. Bacterial infections and them manifestation in cavities mouth (diphtheria, syphilis, gonococcal gingivo-stomatitis, tuberculosis)
4. Viral infections and them manifestations in cavities mouth (herpes)

MAIN LITERATURE:

1. V.N. Tsarev. Microbiology, virology and immunology. Moscow, 2009 With. 543.
2. A.A. Vorobyov. Medical microbiology, virology and immunology.Moscow, 2004 With. 702.

3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
4. V.V. Tez. Guide to practical exercises in microbiology, virology and immunology. Moscow, 2002
5. L.Ya. Plakhtiy, A.Ch. Tskhovrebov. Textbook on microbiology of the oral cavity. Vladikavkaz, 2006.

ADDITIONAL LITERATURE:

1. L.Ya. Plachtius, V.N. Tsarev. Microbiological and molecular genetic justification applications antibiotics in periodontics. Moscow, 2007 G. With. 180.
2. V.N. Tsarev, L.Ya. Plachtius. clinical, bacteriological, laboratorymethods of diagnostics and strategy of antibacterial therapy of generalized periodontitis. Moscow, 2008 With. 74.
3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry. Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORKS ON STUDYED TOPIC:

1. Modern methods definitions sensitivity bacteria to antibiotics.

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3. Give a comparative description of the main groups of antibacterial drugs, which are used in dentistry. Arrange in the form of a table, using manuals and methodical recommendations.

SELF CONTROL

	Questions:	**Options answers:**
1.	**To viral diseases oral mucosainclude:**	a) herpes b) syphilis c) stomatitis G) gingivitis
2.	**Pathogen syphilis is:**	a) Prevotella melaninogenica b) Treponema pallidum in) Actinobacillus actinomycetemcomitansG) Veillonella parvula
3.	**HIV strikes:**	a) monocytes b) erythrocytes c) macrophages G) platelets
4	**Actinomycetes are a group bacteria, With activation which**	a - phlegmon and abscesses of the maxillofacialareas

	bind development nextdiseases:	b - chronic inflammatory diseasessoft and bone fabrics in - returnable aphthous stomatitisG – osteomyelitis
5	**macrolide antibioticsapply for treatment:**	a – candidiasis cavities mouth b - leptotrichiasis mucousin – periodontitis G - returnable aphthous stomatitis
6.	**Etiological factors odontogenic infections are:**	a - crowding out normal anaerobic floravirulent aerobes such as Pseudomonas aeruginosa wand b - decrease in the redox potential of tissues andactivation anaerobes c - entry of spores of anaerobic clostridia into wound from the environment G - hit pathogenic microflora in wound
7.	**In the second stage of the disease syphilis methods are used diagnostics:**	a) microscopic b) bacteriologicalin) serological G) biological
8.	**Operating wounds called "clean" when running surgical interventions onhead and neck, if during surgeryNo contact tools co**	a - mucous shell cavities mouth b - mucous shell adnexal sinusesnose in - skin G - mucous nasal moves

9	**Match toxin formation and groupsanaerobes:**	a - forms exotoxin b - forms endotoxin in - forms disputes G - not forms disputes	1. Bacteroides 2. Clostridium 3. Peptococcus 4. Fusobacterium
10.	**Match called infections and kindpathogen:**	a – tetanus b - gas gangrenein – candidiasis G - fusospirochetosis	1. Candida albicans 2. Clostridium tetani 3. Fusobacterium nucleatum 4. Clostridium novyi.

PRACTICAL OCCUPATION No. 8.

Theme: Chronic foci infections. pathogens tuberculosis and leprosy. Features of diagnosis and manifestation of infection in the oral cavity. Prevention and treatment tuberculosis and leprosy

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Methods study quantitative and quality composition microflora gingivalgroove and periodontal pockets.

2. Main representatives resident microflora at absence pathology fabricsperiodontal.
3. Peculiarities composition microflora with gingivitis.
4. Peculiarities composition microflora at periodontitis.
5. "Parodontopathogenic" microbes (Porpyromonas gingivalis, Prevotella melaninogenicus, Actinomyces naeslundii). Proof them participation in pathogenesis diseases.
6. Immunological changes (general and local) occurring in response tobacterial antigens and toxins.
7. Modern methods treatment diseases periodontal in accordance With lastscientific data.

MAIN LITERATURE:

6. V.N. Tsarev. Microbiology, virology and immunology. Moscow, 2009 With. 543.
7. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
8. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
9. V.V. Tez. Guide to practical exercises in microbiology, virology and immunology. Moscow, 2002
10. L.Ya. Plakhtiy, A.Ch. Tskhovrebov. Textbook on microbiology of the oral cavity. Vladikavkaz, 2006.

ADDITIONAL LITERATURE:

4. L.Ya. Plachtius, V.N. Tsarev. Microbiological and molecular genetic justification applications antibiotics in periodontics. Moscow, 2007 G. With. 180.
5. V.N. Tsarev, L.Ya. Plachtius. clinical, bacteriological, laboratorymethods of diagnostics and strategy of antibacterial therapy of generalized periodontitis. Moscow, 2008 With. 74.
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TASKS FOR INDEPENDENT WORK ON STUDYED TOPIC:

2. Methodology fence researched material from gingival groove and pathological gingival pockets for microscopic and bacteriological methods research.

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SELF CONTROL

Questions: **Options answers:**

9	**Representatives obligate anaerobicoral bacteria are:**	a - streptococci groups "sangvis", corynebateria and rotia b - enterococci, actinomycetes and lactobacilli c - prevotella, porphyromonas, spirochetes and fusobacteria G - staphylococcus, Pseudomonas aeruginosa and intestinalsticks
10.	**diseases, direct causewhich are resident microbes,are called:**	a - toxicoses b - infectious diseasesin - mixed infections G - opportunistic diseases
11	**specific factorsprotections in force oral fluid are:**	a - lysozyme and myeloperoxidase b - Components complement and properdinin – granulocytes and fibroblasts G - sIgA
12.	**Qualitative composition associations of residents in various plots organism defined:**	a - presence enzymes aggressionb - products exotoxins in - conditions a habitat in givenniche G - presence endotoxins
13.	**Main method surveys dental patient:**	a) x-rayb) clinical c) cytologicalG) laboratory
14	**Group antibiotics macrolides are used fortreatment:**	a – candidiasis cavities mouth b - leptotrichiasis of the mucosain – periodontitis G - returnable aphthous stomatitis
15.	**With bacteriological the study of purulent exudate in odontogenicphlegmon and abscesses most often stand out:**	a - Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pyogenes b – Lactobacillus brevis, Bifidobacterium spp., Candida kefiri in - Escherichia coli, Bacteroides fragilis, Pseudomonas aeruginosae G –Prevotella melaninogenica, Fusobacteriumnucleatum, Peptostreptococcus anaerobius
16	**When transporting material from a patient suspicion on anaerobicinfection is necessary observe the following requirements:**	a - place the material in the transport mediumand deliver to chilled able b - place material in nutrient medium anddeliver at a temperature 37 about FROM c - place the material in a dry, sterilebottle With anoxic gas mixture G - place material in nutrient medium co stimulants growth anaerobes

PRACTICAL OCCUPATION No. 9-10.

Theme: Microbiological diagnostics dysbiosis cavities mouth and stomatitis. Dysbiosis and opportunistic stomatitis. Opportunistic processes How manifestations immunodeficiencies and HIV infections. laboratory diagnosticscandidiasis, leptotrichiasis, fusospirochetosis.

QUESTIONS FOR SOURCE CHECK (BASIC) LEVEL KNOWLEDGE:

1. Methods study quantitative and quality composition microflora gingivalgroove and periodontal pockets.
2. Main representatives resident microflora at absence pathologyfabrics periodontal.
3. Peculiarities composition microflora at gingivitis
4. Peculiarities composition microflora at periodontitis
5. Periodontogenic microbes. Proof them participation in pathogenesis diseases
6. Immunological changes, ongoing in answer on bacterial antigens andtoxins
7. Modern methods treatment diseases periodontal in accordance With lastscientific data.

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3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
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1. L.Ya. Plachtius, V.N. Tsarev. Microbiological and molecular genetic justification applications antibiotics in periodontics. Moscow, 2007 G. With. 180.
2. V.N. Tsarev, L.Ya. Plachtius. clinical, bacteriological, laboratorymethods of diagnostics and strategy of antibacterial therapy of generalized periodontitis. Moscow, 2008 With. 74.
3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry. Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORK ON STUDYED TOPIC:

1. Stages laboratory diagnostics candidiasis.

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2. Fill table:

Table .

Scheme reactions agglutination

Components test tubes	1	2	3	four	five	6	7
1. Phys. rr							
2. Researched serum 1:40							
3. Cell antigen (diagnosticum)							
ACCOUNTING RESULTS							

SELF CONTROL

Questions:	Options answers:
1. On orthopantomogram receive:	a) extended x-ray imagein/jaw b) X-ray image of the temporomandibular joint in) extended x-ray imageLF G) extended x-ray imagein. and n/h e) expanded x-ray imagein / h, n/h and v.n./h sust.
2. When determining mobility teeth allocate:	a) two degrees of mobilityb) three degree mobility in) five degrees mobility
3. The causative agents of juvenileperiodontitis are:	a - leptotrichia b - streptococci in - actinobacilli

		G - bifidobacteria
4	**characteristic microbiological feature purulentperiodontitis is predominance:**	a - staphylococcal flora above streptococcal b - streptococcal flora above staphylococcal c - these microorganisms do not play leading roles G - Everybody answers wrong
5	**By type breathing clostridia:**	a - obligate anaerobes b - optional anaerobesin – obligate aerobes G - optional aerobesd – microaerophiles
6.	**Practical applicationlysis reactions in dental practice:**	a. serodiagnosis of typhoid fever - reaction Vidal, b. brucellosis serodiagnosis - reaction Wright, Heddelson, in. seroidentification pure cultures bacteria on glass d. immobilization-lysis reactionpale treponema.
7.	**When transporting material from a patient suspicion on anaerobicinfection is necessary observe the following requirements:**	a - place material in transportmedium and delivered chilled able b - place the material in the nutrient Wednesday and deliver at temperature 37 about FROMc - place the material in a dry, sterile oxygen-free vial gas mixture d - place the material in the nutrient Wednesday co stimulants growth anaerobes
8.	**Forms of odontogenic infections may have next sequence development:**	a - pulpitis → periostitis → periodontitis → abscess or phlegmonb – periodontal abscess → osteomyelitis → sepsis in - periodontitis → phlegmon → lymphadenitis → mediastinitisG - pulpitis → periodontitis → phlegmon or abscess → sepsis

PRACTICAL OCCUPATION No. eleven.

Topic: Microflora in prosthetics and implantation of teeth. The study of adhesion and colonization bacteria cavities mouth on dental materials. Diagnostics peri-implantitis and them prevention.

QUESTIONS FOR CHECKS INITIAL (BASIC) LEVEL KNOWLEDGE:

1. Representatives of which biotopes of the oral cavity are the most common pathogenspost-implantation complications?
2. Ways infections zones implantation, related With contamination bone lodgeimplant and seam lines.
3. Pathogenesis and clinical forms post-implantation complications inflammatorycharacter.
4. Fence material for research at peri-implantitis and osteomyelitis.
5. Prevention post-implantation complications inflammatory character.

MAIN LITERATURE:

1. V.N. Tsarev. Microbiology, virology and immunology. Moscow, 2009 With. 543.
2. A.A. Vorobyov. Medical microbiology, virology and immunology. Moscow, 2004 With. 702.
3. A.A. Vorobyov, V.N. Tsarev. Workshop for laboratory works With illustrated situational tasks in microbiology, virology andimmunology. Moscow, 2008
4. V.V. Tez. Guide to practical exercises in microbiology, virology and immunology. Moscow, 2002
5. L.Ya. Plakhtiy, A.Ch. Tskhovrebov. Textbook on microbiology of the oral cavity. Vladikavkaz, 2006.

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1. L.Ya. Plachtius, V.N. Tsarev. Microbiological and molecular genetic justification applications antibiotics in periodontics. Moscow, 2007 G. With. 180.
2. V.N. Tsarev, L.Ya. Plachtius. clinical, bacteriological, laboratorymethods of diagnostics and strategy of antibacterial therapy of generalized periodontitis. Moscow, 2008 With. 74.
3. V.N. Tsarev, L.Ya. Plachtius, R.V. Ushakov. New technologies in dentistry. Moscow, 2007 With. 163.

TASKS FOR INDEPENDENT WORKS ON STUDYED TOPIC:

1. Sketch:

a) convertibles

b) peptostreptococci

c) fusobacteria

SELF CONTROL

	Questions :	Options answers:
1.	**macrolide antibioticsapply for treatment:**	a – candidiasis cavities mouth b - leptotrichiasis mucousin – periodontitis d - recurrent aphthous stomatitis
2.	**clinical indications for perioperative antibiotic prophylaxis are:**	a - prosthetics b - resection alveolarprocess in chronic osteomyelitis in - operations at fractures jaws G – removal teeth
3.	**Antibiotic with purpose perioperative prophylaxisnecessary enter:**	a - not earlier than 1 hour before operations and not later, how per thirty minb - not earlier than 3 hours before operations and not later, how per thirty minin - per day before operations G - in day operations and in flow 3-5 days after her completion
4	**characteristic feature odontogenic osteomyelitisis:**	a - dominance staphylococcalflora over anaerobic b - the predominance of anaerobicflora above staphylococcal c - these microorganisms are not have decisive values G - Everybody answers wrong
5	**Fusobacteria - this is:**	a - Gram-aerobes b - Gram+ aerobes c – Gram anaerobes G - Gram+ anaerobes
6.	**By type breathing clostridia:**	a - obligate anaerobes b - optional anaerobesin – obligate aerobes G - optional aerobesd – microaerophiles
7.	**Spiramycin (rovamycin) for perioperative prophylaxisappointed to dose:**	a - 1.5 million ED, intravenously per 3hours b - 0.5 million ED, intramuscularly perthirty min in - 1.5 million units, i / m or / in for 30min G - 1 million ED, orally per day

8.	**Practical usereactions lysis in dental practice:**	a. serodiagnosis abdominal typhus - reaction Vidal, b. serodiagnosis brucellosis - reaction Wright, Heddelson, in. seroidentification of pure cultures bacteria on glass d. immobilization-lysis reaction pale treponema.

PRACTICAL OCCUPATION No. 12.

TEST CONTROL.