

Крок1 (2011-2021)
СПЕЦІАЛЬНІСТЬ 226 «ФАРМАЦІЯ, ПРОМИСЛОВА ФАРМАЦІЯ»
ДЛЯ ПІДГОТОВКИ ФАХІВЦІВ ДРУГОГО (МАГІСТЕРСЬКОГО) РІВНЯ ВИЩОЇ
ОСВІТИ З ДИСЦИПЛІНИ «МІКРОБІОЛОГІЯ З ОСНОВАМИ ІМУНОЛОГІЇ»

II семестр

1. Air contamination with pathological microorganisms can be anticipated by the presence of indicator bacteria. Specify the bacteria that indicate immediate epidemiologic danger:

* Hemolytic streptococci

Sarcinae

Moldfungi

Yeastfungi

Micrococci

2. Soil microflora often includes representatives of pathogenic microorganisms. Specify the diseases with causative agents that remain viable in the soil for a long time:

* Tetanus and gas anaerobic infection

Tuberculosis and mycobacterioses

Colibacillosis and cholera

Leptospirosis and plague

Typhoid fever and dysentery

3. Microbiological purity of tablet drug has been tested at a factory. Samples cultivation in mannitol salt agar result ed i growth of golden yellow colonies, microscopic examination of colonies detected gram positive globular bacteria positione din clusters; microorganisms had plasma coagulation prorerties. What pure bacterial culture was obtained? * Staphylococcus aureus

* Staphylococcus aureus

Enterobacteriaceae

Staphylococcus epidermidis

Staphylococcus saprophyticus

Pseudomonas aeruginosa

4. Mosaic discoloration of leaves has been detected at medicinal plantations. What microorganisms are the cause of such damage?

* Plant-pathogenic viruses

Plant-pathogenic bacteria

Plant-pathogenic fungi

Protozoa

Rickettsia

5. Analysis of the cerebrospinal fluid of a child with signs of purulent lesion of brain tunics revealed gram negative bean-shaped diplococci. What provisional diagnosis can be made based on the analysis results?

* Meningitis

Gonorrhea

Cholera

Plague

Anthrax

6. Smears from tonsillar coating of a patient were stained by Neisser's method. Microscopy revealed thin yellow V-shaped bacilli with dark blue grains at their ends. Make the preliminary diagnosis:

* Diphtheria

Measles
Tuberculosis
Whooping cough
Influenza

7. A pharmaceutical enterprise produces a tetanus-specific preventive drug. Which drug of those listed below is it?

* Anatoxin
Deadvaccine
Livevaccine
Immunoglobulin
Recombinant vaccine

8. Inoculation in a nutrient medium was performed to determine probable contamination of a drug with fungi. The colonies are large, resembling sour cream. What nutrient medium had been used in this case?

* Sabouraud
Loewenstein-Jensen medium
Roux
Loeffler
FINN-I

9. Many drugs must be manufactured under strictly aseptic conditions. One such possible source of microbiological contamination of drugs is laboratory glassware. What method should be used to sterilize the glassware?

* Dry heat
Ignition
Tyndallization
Pasteurization
Boiling

10. Cerebrospinal fluid of a patient diagnosed with meningitis was taken for analysis. To detect the causative agent the sample was inoculated in a nutrient medium. Prior to that a serum had been added to the medium. What causative agent is expected to be obtained in this case?

* Meningococcus
Mycobacteria
Staphylococcus
Viruses
Rickettsia

11. A chemotherapeutic agent has bactericidal effect against streptococci, staphylococci, bacilli, and clostridia. According to its action spectrum this drug belongs to the following group:

* Broad spectrum antibacterial agents
Narrow spectrum antibacterial agents
Broad spectrum antifungal agents
Antiviral agents
Antituberculous agents

12. A certain infection leads to fetus malformation if a pregnant woman is affected. What vaccine should be used for prevention of this infection?

* Rubella virus vaccine
Influenza virus vaccine
Mumps vaccine

Poliovirus vaccine
Antirabic vaccine

13. HIV-infection occupational risk groups include people of various professions, healthcare workers included. Specify the most likely route of infection transmission for healthcare workers:

- * Parenteral transmission
- Fecal-oral transmission
- Droplet transmission
- Transmission via airborne dust particles
- Vector-borne transmission

14. Microbial survival within environment is facilitated by spore formation. What microorganisms of those listed below are spore formers:

- * Clostridia
- Bacteroides
- Staphylococci
- Peptococci
- Peptostreptococci

15. After the pus sample taken from the urethra had been inoculated on ascitic agar, it resulted in growth of round transparent colonies. Microscopy of the colonies shows gram-negative kidney bean-shaped diplococci. What causative agent is it?

- * Gonococcus
- Pneumococcus
- Meningococcus
- Micrococcus
- Streptococcus

16. During assessment of air purity in an aseptic unit of a pharmacy, sedimentation analysis had been applied. Test resulted in growth of the small colonies with areas of hemolysis. What medium was used for inoculation?

- * Blood agar
- Levine's formulation (Eosin Methylene Blue agar)
- Endo agar
- Ploskirev's agar
- Egg-yolk salt agar

17. Microorganisms in the environment are being affected by various physical factors. What is the effect of high temperature on a microbial cell?

- * Irreversible degradation of all cellular structures
- Mutagenic effect
- Fats saponification
- Transition into anabiosis state
- Albuminolysis

18. Causative agents of infectious diseases can be carried both by humans and animals. Name the group of infections that affect animals and can be passed onto humans:

- * Zoonoses
- Sapronoses
- Anthroponoses
- Zoonoses
- Mixed

19. A Gram stained smear shows large oval violet cells that form pseudomycelium. Name these microorganisms:

- * Candida fungi
- Mucor fungi
- Plasmodium vivax
- Actinomycetales
- Penicillium fungi

20. What is the main mechanism of benzylpenicillin bactericidal action on the coccal flora?

- * Disturbed synthesis of microbial cell wall
- Inhibition of protein synthesis
- Disturbed cytoplasm membrane permeability
- Activation of macro organism immune system
- Increased phagocytic activity of leukocytes

21. Sanitary microbiological investigation of potable water has detected coliphages. What conclusion can be made about the sanitary-hygienic status of this water?

- * Faecal contamination
- The water is safe to drink
- The water is safe to drink after boiling
- Artesian water
- The water is for industrial use only

22. Investigation of bacterial contamination of indoor air in a pharmacy takes into account the total number of microorganisms present in a certain air volume, as well as qualitative content of indoor air microflora. Name the sanitary-indicative microorganisms for indoor air:

- * Staphylococcus and streptococcus
- Colibacillus
- Sarcina
- Chromobacterium
- Fungi and yeasts

23. In a nursery-garden some medicinal plants developed signs of a disease: there are yellow spots and necrotic foci on the leaves. Sap of the diseased plants remained infectious even after passing through a bacteria-excluding filter. No microorganisms growth was detected on the nutrient medium. What microorganisms could be the cause of this disease?

- * Viruses
- Fungi
- Ray fungi
- Bacteria
- Mycoplasma

24. A woman complains of itching lips; they are reddened and covered in scabs and scales after she had been using new lipstick for two weeks. What allergic reactions result in this kind of disorders?

- * Delayed
- Cytotoxic
- Immune complex
- Anaphylactic
- Stimulating

25. It can be safely assumed that the infants born from the mothers with the history of measles will not be affected by the measles outbreak during their stay in the maternity ward. What classes of antibodies provide the infants with the resistance to this disease?

- * IgG

IgA
IgD
IgM
IgE

26. The children attending a kindergarten were hospitalized with diagnosis of poliomyelitis. What was the route of infection transmission in this case?

- * Faecal-oral transmission
- Alimentary transmission
- Direct contact transmission
- Transmission via airborne dust particles
- Vector-borne transmission

27. Microscopy of subterranean organs of an Asteraceae family plant shows articulated laticifers with anastomoses filled with white latex. It is characteristic of the following plant:

- * *Taraxacum officinale*
- Helianthus annuus*
- Artemisia absinthium*
- Bidens tripartita*
- Achillea millefolium*

28. During skill building session in the field of microbiology, a student performed inoculation of microorganisms into the solid nutrient medium to obtain isolated colonies. How should inoculation loops be sterilized after that?

- * Heating in the burner flame
- Boiling under 60°C five times
- Soaking in 1% chloramine-B solution
- Dry heat sterilization under 160°C for 120-150 minutes
- Formaldehyde vapor sterilization

29. In the age of 5 months the child had measles antibodies in the blood. By the age of 1 year these antibodies disappeared from the child's blood. Why were these antibodies present in the child's blood?

- * Acquired natural passive immunity
- Non-specific resistance
- Acquired natural active immunity
- Innate immunity
- Artificial immunity

30. A 25-year-old man has an appointment with the dentist. Several minutes after his oral cavity was lavaged with furacilin (nitrofurazone) the patient developed significant labial edema. What type of allergic reaction is observed in this case?

- * Anaphylactic
- Cytolytic
- Delayed-type hypersensitivity
- Stimulated
- Immune complex

31. A pharmacy produces a batch of vials with physiological saline for injections. How should they be sterilized?

- * Under pressure in an autoclave
- In a steam-jacketed autoclave chamber
- In a dry heat sterilizer
- X-ray irradiation

Ultraviolet irradiation

32. The defensive mechanisms against some infectious diseases can be greatly reinforced with interferon. Interferon preparations will be the most advisable in cases of the following type of infections

* Viral

Helminthic

Protozoal

Microbioses

Fungal

33. A patient is suspected to have typhoid fever. A sample of blood serum was obtained for analysis and a reaction with *salmonella diagnosticum* was performed. What type of serological reaction is it?

* Agglutination reaction

Precipitation reaction

Enzyme-linked immunosorbent assay

Complement fixation reaction

Radioimmunoassay

Isolation and treatment of infected children

34. A study of the microbiological purity of tablet formulations is conducted at the production site. Cultivation of the samples on mannitol salt agar resulted in the growth of golden-yellow colonies. Microscopic examination of the colonies determined the presence of spherical gram-positive bacteria, arranged in clusters; the microorganisms had the ability to coagulate the plasma. The pure culture of which of the following bacteria was detected in the samples?

* *Staphylococcus aureus*

Enterobacteriaceae

Staphylococcus epidermidis

Staphylococcus saprophyticus

Pseudomonas aeruginosa

35. According to the Pharmacopoeia regulations non-sterile drug can contain certain microorganisms. Name the microorganism that CANNOT be present:

* Enterobacteriaceae

Yeastfungi

Micrococci

Moldfungi

Sarcinae