بسم الله الرحمن الرحيم

microbiology final exam
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1.All of the following factors helped to achieve the successful eradication of smallpox from the human population, EXCEPT:

a. The absence of a persistent carrier state of variola virus.
b. The antigenically unstable nature of variola virus.
C. The absence of asymptomatic cases of smallpox.
d. The highly efficient nature of smallpox vaccine.
e. The absence of an animal reservoir for variola virus.

2. A traveler developed diarrhea 2 weeks after returning from a trip. The diarrhea has lasted for over 3 weeks and his stools are greasy and foul - smelling. Which of the following is the most probable etiologic agent?

a. Entamoeba .
b. Giardia.
c. Trichnella .
d. Toxoplasma.
e. Toxoplasma

3.All of the following actors influence the likelihood of transmitting active tuberculosis
EXCEPT:

a. Probability of contact with an infectious person
b. Duration of contact with an infected person
C. Presence of extrapulmonary tuberculosis
d. Presence of laryngeal tuberculosis
e. Environment in which contact occurs. احتمال برضو يكون صح

4.At a party, a student consumed sushi which contained fish. If a parasite becomes established from this raw fish consumption, which of the following problems is most likely?

a. Formation of cercaria that will infect other hosts
b. Vitamin B12 deficiency مش اكيد
C. Formation of oocysts

D. Formation of hydatid cysts
e. Diarrhea

5. Human-to-human transmission is most likely to occur with:
a. Cryptococcus neoformans
b. Aspergillus flavus
C. Coccidioides immitis
d. Histoplasma capsulatum
e. Epidermophyton floccosum.

6.The activation of a CD8-positive T lymphocyte requires presentation of antigen in association with which one of the following?
a .Class I MHC protein and synthesis of interleukin-2 by CD4 T lymphocytes .
b. Class II MHC protein and synthesis of gamma -interferon by macrophages
c. Class II MHC protein and synthesis of interleukin-4 by CD4 T lymphocytes
d. Class I MHC protein and synthesis of gamma-interferon by macrophages
e. Class II MHC protein and synthesis of interleukin-1 by macrophages

7.What structural feature is uniquely found on IgA in breast milk and not found on serum IgM?
a. FcR
b. Secretory piece احتمال تكون برضو صح
C. J chain.
d. Hinge region
e Fab

8.Which one of the following can complete its entire life cycle in the human host?

a. Trypanosoma brucei.
b. Cryptosporidium parvum.
C. Trypanosoma cruzi.
d. Plasmodium falciparum.
e. Toxoplasma gondii.

9.Which one of the following represents the general transmission route of endemic dimorphic fungi to humans?

A.Inhalation of fungal spores.
b. Inhalation of fungal hyphae.
c. Ingestion of fungal yeast cells.
d Ingestion of fungal spores.
e Ingestion of fungal hyphae.

10.Which one of the following sets of cells can present antigen to helper T cells?

a Neutrophils and cytotoxic T cells
b. Neutrophils and plasma cells
C. Macrophages and eosinophils
D. B cells and cytotoxic T cells
e. B cells and dendritic cells

11.A company reported respiratory infections of several employees that were never in contact with each other. PCR was negative for several respiratory viruses and bacterial culture was only successful on buffered charcoal yeast extract (BCYE) agar. Gram staining revealed gram-negative rods. The most likely organism causing this outbreak is:

a. Legionella pneumophila.
b. Streptococcus pneumonia.
C. Bordetella pertussis.
D.Hemophilus influenzae.
E. Helicobacter pylori.

12.A swab was taken from an infected eye of a patient who uses contact lenses, microscopy revealed gram negative rods, culturing of the swab in broth led to the formation of a green dye and had a distinctive fruity smell. This pathogen cousing the infection is most likely

a. Pseudomonas aeruginosa.
b. Chlamydia trachomatis
c. Staphylococcus aureus.
d. Streptococcus agalactia
e .Bartonella henselae

13.An outbreak of a diarrheal disease took place in Amman recently leading to hospitalization of around 800 patients Culturing of stool samples resulted in growth of several bacterial species, growth of one of those species indicates person-person transmission rather than a zoonotic infection, this bacterial species is most likely:

a. Lactobacillus sp.
B.Salmonella typhi.
c. Campylobacter jejune
D. Enterococcus faecalis
e .Escherichia coli .

14.Enterobacteriaceae share one of the following characteristics:

a. All are hospital acquired.
b. All cause infection of the gastrointestinal tract.
C .All are part of the normal gastrointestinal microbiota.
d. All are considered multi drug resistant.
e. All are gram negative rods.

15.Brightfield microscopy and gram staining are not useful in visualizing of one of the following organisms:

a. Treponema palladium
b. Campylobacter jejune
C. Neisseria gonorrhea
d. Escherichia coli
e. Vibrio cholera.

16. An 18-year-old man presented to the emergency department with a progressively worsening headache, photophobia, fever and vomiting. He was diagnosed with aseptic meningitis. The most likely causative agent of the previous case belongs to the family:

a. Retroviridae.
b. Filoviridae.
c Paramyxoviridae.
d. Picornaviridae .

e. Togaviridae.

17. If mutated, which one of the following genes is associated with an increased risk of development of atopic dermatitis?

a. Autoimmune regulator (AIRE) gene
b. Human tissue transglutaminase gene
c. FOXP3 gene.
d. Filaggrin gene.
e. IL2RG gene.

18.Immunophenotyping of a population of cells can be done using:
a. ELISA.
b. Direct immunofluorescence microscopy.
C. Radioimmunoassay.
d. Flow cytometry.
e. Coombs tested.

19. Rhesus D hemolytic disease of the newborn is classified as:

a. Type Ill hypersensitivity reaction .
b. Type Ii hypersensitivity reaction.
c. Type I hypersensitivity reaction.
d. Type VI hypersensitivity reaction.
e. Type V hypersensitivity reaction.

20. The classic triad for congenital rubella syndrome is:
a. Low-grade fever, macular rash, and arthropathy.
b. High-grade fever, pharyngitis,
and lymphadenopathy.
C. Hemolysis, hepatomegaly, and splenomegaly.
d. Deafness, cataract, and congenital heart disease.
e. Hepatitis, pneumonia, and meningitis.

21. The currently available vaccine to prevent hepatitis A infection is:

a.Live-attenuated vaccine
b. Toxoid vaccine
c. MRNA vaccine

d. Subunit vaccine
e. Inactivated vaccine.

22. The human immunodeficiency virus (HIV) infection reaches the AIDS(acquired immunodeficiency syndrome) stage when the peripheral CD4+ T-cell (helper T cell) count is less than :

a. 5000 cells/microliter
b. 200 cells/microliter
c. l cell/microliter
d. 10 cells/microliter
e. 1000 cells/microliter

23. The methods that is used for definitive diagnosis of influenza is:

a. ELISA
b. Flow Cytometry
c. Radioimmunoassay
d. Antigen testing
e. PCR.

24. The oncovirus that can be prevented by vaccination is:

a. HIV
b. Hepatitis E virus
c. Hepatitis A virus
d. Hepatitis C virus
e. Human papillomavirus 16.

25. The polyomavirus JC is the causative agent of:
a. Molluscum contagiosum.
b. Hemorrhagic cystitis.
C. Merkel cell carcinoma (MCC).
d. Progressive multifocal leukoencephalopathy (PML).
e. Erythema infectiosum (fifth disease)

26. Transmissible spongiform encephalopathies are caused by:
a. Ebola virus.

b. Rabies virus.
c. Chikungunya virus.
d. Zika virus.
e. Prions.

27. Which one of the following conditions is NOT associated with parvovirus B19 infection?

A. Hydrops fetalis
b. T-cell acute lymphoblastic leukemia.
C. Pure red cell aplasia in immunocompromised patients.
d. Transient aplastic crisis in patients with chronic hemolytic anemia
e. A mild illness with slapped cheek rash on a patient's face that mainly affect children.

28. Which one of the following hepatic diseases is caused by a DNA virus and can be prevented by vaccination with viral surface antigen that provides protective immunity in the majority of immunized individuals?
a. Hepatitis E.
b. Hepatitis A.
c. Hepatitis D.
d. Hepatitis B.

29. All of the following events take place in germinal centers except:

a. Generation of memory B cells
b. Isotype switching
C. Binding of naive B-cells to the antigen
d. Affinity maturation.
e. Long-lived plasma cell differentiation

30. The elderly can suffer from several immune system malfunctions that can result in secondary immunodeficiency those commonly include all the following except:

a. A decrease in naive B and T cells.
b. A decrease in lymphoid tissue like the thymus and bone marrow.
C. A decrease in cytokine levels
d.A decrease in phagocytosis and chemotaxis.

e. A decrease in antibody levels.

31. When a human pathogen is repeatedly grown and passaged in cells of a different species and then used for vaccination purposes, the resulting vaccine is referred to as a/an:

a. Nucleic acid based vaccine
b. Live attenuated vaccine.
c. Subunit vaccine
d. Toxoid vaccine
e. Non-live vaccine

32. Which of the following vaccines should not be administered to severely immunocompromised patients?

a. Hepatitis B Vaccine
b. Influenza Vaccine.
C. Measles-Mumps-Rubella (MMR) Vaccine.
d. Meningococcal Vaccine.
e, Pneumococcal Vaccine.

33. A patient suffering from recurrent mucosal infections and celiac disease. Turns out he is affected with a primary immunodeficiency. He is most probably affected with:

a. IgA deficiency.
b. DiGeorge Syndrome .
c. Wiskott-Aldrich syndrome.
d. Common variable immunodeficiency (CVID) .
e. Hyper- IgM Syndrome.

34. A severely undernourished 4-year-old girl is referred to the pediatric outpatient clinic for recurrent anemia, an erythematous (redness) rash on her face and trunk and accompanying hepatosplenomegaly. Furthermore, she has T and B cell lymphopaenia (abnormal reduction in lymphocyte numbers). Which immunodeficiency she is most probably affected with?

a. SCID.
b. IgA deficiency.
c. Wiskott-Aldrich syndrome.

d. Agammaglobulinaemia.
e. Complement deficiencies.

35. Somatic hypermutation in the Immunoglobulin (Ig) variable region occurs:

a. During the mitosis and differentiation of all the bone marrow cells
b. During the mitosis and differentiation of hematopoietic stem cells only
c. In the gametes (eggs and sperms) before fertilization
d. During the meiosis and differentiation of all the bone marrow cells

e. During the meiosis and differentiation of hematopoietic stem cells only.

36. Which of the following is true regarding the immunoglobulin (1g) expression by B cells?

a. Each B cell will express the constant region gene for both maternal and paternal Ig alleles.
b. All the B cells will always express the constant region gene for the Ig maternally inherited allele only.
c. A fraction of B cells will express the maternal allele of lg constant gene and another fraction will express the paternal
d. All the B cells will always express the constant region gene for the Ig paternally inherited allele only
e. The expression of the constant region on B cells Ig varies between individuals, some people B cells will express the paternal only, and others will express the maternal only.

37. A farmer was working on his farm, he presented with black crusty ulcers on his forearms which of the following is FALSE regarding the pathogenesis of this organism?

a. The ulcer is painless and edematous
b. The cutaneous sign seen is due to exotoxins that cause swelling and inhibition of cell growth
C. Antibodies against the B subunit of the virulence factor do not provide protection.
d. This disease is transmitted by spores in the soil that germinated trauma on the patients forearm.
e. Spores are not retrieved from the site of infection.

38. A patient has a mutation which prevents him from inhibiting activation of T cells and causes a very low concentration of IgA, which of the following cytokines are mutated?

a. Interleukin 4.
b. Tumor Necrosis Factor
c. Interleukin 10
d. Gamma Interferon
e. Transforming Growth Factor?

39. In determining the cause and treatment of pharyngitis, which of the following is FALSE?

a Second exposure to the same M type bacterium confers resistance, however there are a lot of serotypes and reinfection usually occurs due to a different serotype
b. Bacitracin resistant streptococci that completely lyses blood are not present in the upper respiratory tract
c. Bacitracin sensitive streptococci that completely lyses blood that causes skin infections can cause rheumatic fever.
d. Certain M protein of streptococci determines its predilection to the pharynx, other M protein determine predilection to the skin
e. The M protein is the main antiphagocytis component of group A streptococci, not the capsule.

40. Which of the following conditions caused by S. aureus is thought to be antibody mediated?

a. Sepsis
b. Endocarditis.
c. Scarlet fever
d. Gastroenteritis.
e. Kawasaki disease.

41.Which of the following organisms is NOT mostly implicated in antimicrobial resistance?

a. Staphylococcus aureus.
b. Klebsiella pneumoniae.
c. Enterococcus faecalis.

d. Mycobacterium tuberculosis.
e. Streptococcus pneumoniae.

42. Which of the following regarding infective endocarditis is false?
a. Left side of the heart is less affected
b. People with prosthetic valves or with reduced immunity are at risk, healthy individuals are not
C. Most of the pathogens that cause it are normal flora in the oral cavity
d. Can occur from minor surgeries to the oral cavity احتمال انه برضو جواب
e. Bacteria most commonly implicated are Gram positive cocci.

43. Which of the following toxins, mode of action combination is incorrect?

a. Bordetella pertussis -- stimulate adenylate cyclase by ADP ribosylation
b. S. aureus food poisoning -- superantigen
C. E. coli shiga like toxin -- inhibit protein synthesis in enterocytes
d. C. difficile pseudomembranous colitis -- protease that cleaves desmosomes
e. C. tetani -- blocks release of glycine neurotransmitter

44.Amer was transplanted a kidney and he was placed on Tacrolimus led triple therapy. However, after 2 months he has started to show some sign of rejection. Which of the following may help him?

O a. Reducing the dose of Tacrolimus
b. Increasing the dose of Tacrolimus
c. Giving Mycophenolate mofetil instead of Azathioprine
d. Replacing Cyclosporine instead of Tacrolimus
One. Stopping the whole immunosuppresses.

45. Anti-interleukin 13 is targeting which of the following cells

a. Neutrophils.
b. Eosinophil.
c. Basophils.
d. Macrophage.
e. PMN.