TEST BANK

Doctor 2019

SUBJECT:

Microbiology Makeup - 019

COLLECTED BY :

Leen Farouq

Virology

1) Acute hemorrhagic cystitis is:
a. A self-limited disease.
b. Complicated by glomerulonephritis.
c.Characterized by microscopic hematuria.
d. Caused by adenoviruses 40 and 41.
e. Usually accompanied by fever and hypertension.

2) Which one of the following viruses belongs to the genus Rubulavirus?
a. Hendra.
b. Measles.
C. Rubella.
d. Mumps.
e. Nipah.

3) Which one of the following is high-risk HPV type?
a. HPV-32.
b. HPV-31.
C. HPV-11.
d. HPV-6.
e. HPV-13.

4) Which one of the following combinations regarding viral hepatitis routes of transmission is false?
a. Hepatitis A virus: consumption of contaminated shellfish.
b. Hepatitis E virus: blood transfusion.
c. Hepatitis C virus: injection drug use.
d. Hepatitis B virus: vertical transmission.
e. Hepatitis B virus: sexual transmission.

5) Umbilicated papule is characteristic of:
a. Measles.
b. Cold sore.
c. Varicella.
d. Zoster.
e. Molluscum contagiosum.

6) The quadrivalent HPV vaccine contains virus-like particles composed of:
a. El and E2 proteins.
b. LI protein.
c. Ll and L2 proteins.
d. E6 and E7 anti-oncoproteins.
e. El protein.

7) The most common route of human immunodeficiency virus type 1 (HIV-1) transmission globally is:
a. Multiple unprotected homosexual practices.
b. Mother-to-child transmission.
C. Blood transfusion.
d. Multiple unprotected heterosexual practices.
e. Injection drug use.

8) 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 (per microliter):
a. 1 cell.
b. 1000 cells.
c. 50 cells.
d. 200 cells.
e. 10 cells.

9) The clinical disease that is not related to herpes simplex virus type 1 infection is:
a. Postherpetic neuralgia.
b. Pharyngitis.
C. Mononucleosis.
d. Cold sores.
e. Gingivostomatitis.

10) The antiviral medication that is used to treat and prevent influenza A and influenza B by inhibiting viral neuraminidase is:
a. Ribavirin.
b. Amantadine.
c. Tenofovir.
d. Oseltamivir.
e. Sofosbuvir.

11) Complete closed circular DNA is seen in the life cycle of which one of the following hepatitis viruses?
a. HAV.
b. Delta agent.
C. HCV.
d. HBV.
e. HEV.

12) CD21 is the cellular receptor for:
a. Human immunodeficiency virus type 1 (HIV-1).
b. Epstein-Barr virus.
c. Kaposi's sarcoma herpesvirus.
d. Parvovirus B19.
e. Hepatitis B virus (HBV).

Answers

1	A
2	D
3	B
4	B
5	E
6	B
7	D
8	D
9	A
10	D
11	D
12	B

Immunology

1) Which of the following receptors undergoes the most significant gene rearrangement during maturation of the cell that expresses it?
a. T cell receptors
b. Toll like receptors
c. Nod like receptors
d. B cell receptors
e. C-type lectin receptors

2) Which of the following is a characteristic of adaptive immunity in living organisms?
a. Important for eradicating intracellular infections.
b. Activated immediately upon antigen encounter.
C. An ancient immune system that can be found in plants and unicellular organisms.
d. Recognizes only a small number of conserved molecular patterns associated with pathogens.
e. Deficiencies in adaptive immunity usually results in no symptoms.

3) Which of the following complement proteins/complexes lyse pathogens by forming pores in the cell membrane?
a. C5b-9
b. C1r
C. C3b
d. C3a
e. C2a

4) Which of the following characteristics regarding neutrophils is correct?
a. Mainly found as tissue resident cells.
b. Can release its DNA to trap and kill pathogens.
c. Contains mainly acidophilic granules in the cytoplasm.
d. Half-life of a few weeks in circulation.
e. Part of the mononuclear phagocyte system

5) Which of the following cell types is expected to participate last in the immune response during first exposure to an antigen?
a. Naive CD4+ T cells
b. Natural killer cells
C. Neutrophils
d. Mast cells
e. Macrophages

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

7) The most abundant immunoglobulin (Ig) class in circulation is:
a. IgG
b. IgE
c. IgD
d. IgA
e. IgM

8) The cell type that can best activate naive CD4+ T-cell is :
a. Conventional dendritic cell
b. CD4+ T-cell
c. Macrophage
d. Plasmacytoid dendritic cell
e. B lymphocyte

9) During leukocyte extravasation into tissue, endothelial cells lining blood vessels start expressing glycoproteins that bind leukocytes with low affinity, an example of those glycoproteins is:
a. Intercellular adhesion molecule (ICAM-1)
b. Sialyi lewis x
c. leukocyte function-associated antigen 1 (LFAI)
d. Selectin E
e. IL-1

10) Complement activation is best described as:
a. A group of protein inhibitors of inflammation.
b. A group of cationic polypeptides that insert in pathogen cell membrane leading to lysis.
C. A cascade of events that includes proteolytic cleavage of a set of proteins that are otherwise circulating in serum in an inactive form.
d. A group of lipids and carbohydrates that recognize PAMPS and DAMPS.
e. An essential pathway of adaptive immunity that works within 1 week to 10 days of antigen encounter.

11) All of the following events take place in germinal centers except:
a. Binding of naive B-cells to the antigen
b. Long-lived plasma cell differentiation
c. Isotype switching
d. Affinity maturation.
e. Generation of memory B cells

12) A medical student wanted to study effector mechanisms of human macrophages; the student was interested in studying activated M2 macrophages associated with tissue remodeling. Which of the following is the best approach to study such cells?
a. Collect blood monocytes and induce apoptosis in those cells.
b. Collect blood monocytes and hulate them with s and IFN gamma
c. Collect blood monocytes and stimulate them with IL-10.
d. Collect lymphocytes and stimulate them with LPS and IFN gamma
e. Collect lymphocytes and stimulate them with IFN gamma

13) An article published in the Oncoimmunology journal in September 2018. It is discussing an immunotherapy approach that relies on designing and infecting the cancer patient two viruses expressing Melanoma-associated antigen A3 (MAGE-A3). The two viruses, a replication-deficient type-5 human adenoviral (Ad-MAGEA3) and Maraba MGI rhabdovirus (MGI-MAGEA3), are studied in this article preclinically by infecting nonhuman primates (monkeys). This immunotherapy approach is considered:

a. Adoptive cell transfer strategy
b. Small molecules strategy
c. Non-specific immune stimulation strategy
d. Vaccination strategy
e. Removing Immune-checkpoint blockade strategy

14) Which of the following immune components is the most efficient against cancer cells?

a. CD8+ T lymphocytes
b. The most efficient component of the listed above depends on the type of the cancer cells
c. Macrophages
d. Antibodies
e. Natural killer cells

15) Anti-interleukin 13 is targeting which of the following cells :

a. PMN
b. Neutrophils
C. Eosinophil
d. Basophils
e. Macrophages

16) 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?

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

17) 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. Complement deficiencies
b. Wiskott-Aldrich syndrome
C. Agammaglobulinaemia
d. IgA deficiency
e. SCID

18) Regarding antibody production which is true?

a. A B cell can produce IgM to antigens X, Y and Z and then will commit to producing IgG or IgE to one of these antigens
b. AB cell can produce IgM to antigen (x), and then produce IgG or IgE to the same antigen result in production of igM, IgG and IgE produced at different rates C. AB cell can produce IgM to one antigen (X) only, IgE and IgG switch in the serum overtime spontaneously
d. A B cell can only produce IgM to one antigen (X), and a different B cell will commit to producing IgG or IgE to the same antigen but not other antigens
e. AB cell can produce IgM to one antigen (X) and the same B cell will produce IgG or IgE to the same antigen, however it will lose its ability to form IgM to antigen X

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

20) Which one of the following sets of cells can present antigen to helper T cells?
a. Macrophages and eosinophils
b. Neutrophils and plasma cells
C. B cells and dendritic cells
d. B cells and cytotoxic T cells
e. Neutrophils and cytotoxic T cells

21) Regarding immunologic tolerance, which one of the following is the most accurate?
a. The presence of B7 on the surface of the antigen-presenting cell is one of the essential steps required to establish tolerance.
b. Class I MHC protein and synthesis of gamma-interferon by macrophages is a must requirement.
c. Tolerance is easier to establish in adults than in newborns because more self-reactive T cells have undergone apoptosis in adults than in newborns.
d. Clonal deletion occurs with T cells but not with B cells. Tolerance to certain self-antigens occurs by negative selection of immature T cells in the thymus.
e. Once tolerance is established to an antigen, it is permanent (i.e., that individual cannot react against that Antigen (though the antigen is no longer present).

22) Positive selection in the thymus occurs when thymocytes express functional versions of which critical molecule?
a. MHC class I
b. CD28
C. MHC class II
d. T-cell receptor (TCR)
e. Fc receptor

23) Which one of the following is not a feature of autoimmune diseases?
a. It involves an element of environmental triggers.
b. It involves an element of genetic susceptibility.
c. It tends to be self-limited.
d. It can be organ specific.
e. It can be systemic.

24) The filaggrin gene mutation increases the risk for development of:

a. Goodpasture syndrome.
b. Intrinsic asthma.
c. Bullous pemphigoid.
d. Atopic dermatitis.
e. Pemphigus vulgaris.

Answers

1	**D**
2	A
3	A
4	B
5	A*
6	E
7	A
8	A
9	D
10	C
11	A
12	C
13	
14	
15	C
16	E
17	E
18	
19	C
20	C
21	A
22	D
23	C
24	D

Microbiology

1) Which of the following is true regarding bacterial endotoxin?
a. Deactivated rapidly by heating.
b. Dependent on type-3 secretions system.
c. Inhibits the production of proinflammatory mediators.
d. Found in gram negative and gram positive bacteria.
e. Synthesis is commonly coded by genes found on the bacterial chromosome

2) Which of the following is a gram-positive rod that releases an exotoxin that causes flaccid paralysis?
a. Escherichia coli
b. Bacillus anthracis
c. Streptococcus pneumonia
d. Clostridium tetani
e. Clostridium botulinum

3) Which of the following bacterial genera does not contain the enterobacterial common antigen (ECA)?
a. Lactobacilli
b. Shigella
c. Salmonella
d. Escherichia
e. Yersinia

4) The Urease breath test is used for the detection of which of the following organisms:
a. Helicobacter pylori
b. Shigella sonnei
C. Treponema pallidum
d. Campylobacter jejuni
e. Streptococcus pneumonia

5) The presence of axial filaments between the inner and outer membrane is important for the movement of one of the following bacterial species:
a. Treponema pallidum
b. Escherichia coli
c. Streptococcus pneumonia
d. Bacillus anthracis
e. Rickettsia rickettsia

6)The predominant bacterial genus in the vagina is:
a. Enterococcus
b. Escherichia
c. Lactobacillus
d. Mycobacterium
e. Corynebacterium

7) Microscopic examination of a sample taken from a urethral discharge shows gram-negative diplococci and dead neutrophils, the most likely bacterial species causing the discharge is?
a. Treponema pallidum
b. Neisseria gonorrhea
C. Escherichia coli
d. Mycoplasma genitalium
e. Chlamydia trachomatis

8) Inhibiting synthesis of one of the following can significantly affect bacterial adhesion to epithelial cells?
a. Cytolysins.
b. Fimbria.
C. Flagellum.
d. Capsule
e. Type 1 secretions system

9) An infected burn wound was found to contain gram negative rods in high numbers. When grown in nutrient broth the bacteria formed a greenish dye and a distinctive sweet odor. The most likely pathogen causing the infection is:
a. Salmonella Typhi
b. Pseudomonas aeruginosa
C. Escherichia coli
d. Streptococcus pyogenes
e. Clostridium botulinum

10) All of the following is expected to decrease phagocytosis of bacteria except?
a. Biofilm formation.
b. Production of peptidoglycan.
c. Production of complement inhibitors.
d. Production of antibody proteases.
e. Presence of capsule.

11) A stool sample from a patient presenting with bloody diarrhea was analyzed. A fastidious curved gram-negative rod which only grew at 6% CO2 and 42° C was isolated. This organism is most likely:
a. Salmonella Typhi
b. Helicobacter pylori
c. Shigella sonnei
d. Campylobacter jejuni
e. Escherichia coli

12) A friend called suffering from abdominal pain and vomiting one hour after a having lunch, which of the following is false regarding this case?
a. There is no need for antibiotic therapy.
b. Symptoms caused by the toxin usually last for a week.
C. This can be due to Ingestion of preformed bacterial enterotoxin by Clostridium perfringens.
d. Hydration and pain management can be recommended.
e. This can be due to ingestion of preformed bacterial enterotoxin by Bacillus cereus

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14) Which of the following toxins, mode of action combination is incorrect?
a.Bordetella pertussis --> stimulate adenylate cyclase by ADP ribosylation
b. C. tetani --> blocks release of glycine neurotransmitter
c. C. difficile pseudomembranous colitis --> protease that cleaves desmosomes
d. S. aureus food poisoning --> superantigen
e. E. coli shiga like toxin --> inhibit protein synthesis in enterocytes

15) Which of the following organisms is NOT mostly implicated in antimicrobial resistance?
a. Klebsiella pneumoniae
b. Mycobacterium tuberculosis
c. Staphylococcus aureus
d. Enterococcus faecalis
e. Streptococcus pneumoniae

16) Which of the following conditions caused by S. aureus is thought to be antibody mediated?
a. Endocarditis
b. Gastroenteritis
c. Sepsis
d. Scarlet fever
e. Kawasaki disease

17) In determining the cause and treatment of pharyngitis, which of the following is FALSE?

a. Bacitracin resistant streptococci that completely lyses blood are not present in the upper respiratory tract

b. The M protein is the main antiphagocytis component of group A streptococci, not the capsule

c. 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

d. Certain M protein of streptococci determines its predilection to the pharynx, other M protein determine predilection to the skin

e. Bacitracin sensitive streptococci that completely lyses blood that causes skin infections can cause rheumatic fever

18) 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. Antibodies against the B subunit of the virulence factor do not provide protection

b. Spores are not retrieved from the site of infection

c. The ulcer is painless and edematous

d. This disease is transmitted by spores in the soil that germinated trauma on the patients forearm

e. The cutaneous sign seen is due to exotoxins that cause swelling and inhibition of cell growth

19) Which of the following modes of transmission accounts for the development of neurocysticercosis in humans?

a. Fecal-oral taeniid eggs

b. Bladderworms in raw beef

c. Cyclosporan oocysts in water

d. Ascaris eggs from soil

e. Toxoplasma zoitocysts in raw pork

20) Which of the following microbiologic properties distinguishes Entamoeba histolytica from nonpathogenic ameba like E. dispar?
a. Characteristic shape of the cyst
b. Fecal-oral route of transmission
C. Number of nuclei in the trophozoite
d. Colonization of the colon
e. Ability to produce cytotoxins

21) Which of the following is the most common form of infection in patients with mucormycosis?
a. Cutaneous
b. Rhinocerebral
c. Pulmonary
d. Gastrointestinal
e. Hematogenous dissemination

22) Vector for leishmaniasis is :
a. Anopheles mosquito
b. Tick
c. Tsetse fly
d. Mite
e. Sand fly

23) The infectious stage of plasmodium is
a. Merozoites
b. Schizonts
c. Trophozoites
d. Sporozoites
e. Gametocyte

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

Answers

1	E
2	E
3	A
4	A
5	A
6	C
7	B
8	B
9	B
10	B
11	D
12	B
13	B
14	C
15	E
16	E
17	B
18	A
19	E
20	E
21	B
22	E
23	D
24	E