MIDTERM COLLECTED QUESTIONS OF IMMUNOLOGY & MICROBIOLOGY 019

1) **Natural antibodies found in circulation are mainly secreted by which of the following cells?**
   a. Plasmacytoid dendritic cell
   b. B1 B-cells
   c. Follicular B-cells
   d. CD4+ T-cells
   e. Macrophages

2) **The recognition of a pathogen-associated molecular patterns (PAMP) can be done with one of the following:**
   a. Collectins
   b. Mannan
   c. NF-kappa B
   d. IL-1
   e. Peptidoglycan

3) **One of the following immune cells are found mainly in circulation and migrate to tissue immediately upon sensing danger:**
   a. Naïve B-cell
   b. Neutrophil
   c. Conventional dendritic cell
   d. Mast cell
   e. Macrophage

4) **When nutrients in the culture media are depleted and toxic materials accumulated this will lead to?**
   a. Stationery phase
   b. log phase
   c. Lag phase
   d. Decline phase
   e. Exponential phase

5) **About gram negative bacteria, one is False?**
   a. They have a thick monolayer of peptidoglycan
   b. Lipid A can lead to endotoxin
   c. The outer membrane protects the bacteria
   d. Cytoplasmic membrane contains LPS

6) **The precursor cell to an activated macrophage present at the site of inflammation is:**
   a. Neutrophil
   b. Monocyte
   c. Follicular dendritic cell
   d. Naïve T-cell
   e. Mast cell

7) **One of the following molecules interacts directly with lipopolysaccharides:**
   a. IL-1
   b. TNF-alpha
   c. MyD88
   d. Toll like receptor 3
   e. Toll like receptor 4

8) **Dendritic ulcers are pathognomonic for:**
   a. Herpes simplex encephalitis
   b. Herpes simplex aseptic meningitis
   c. Herpes simplex congenital infection
   d. Herpetic whitlow
   e. Herpes simplex keratitis

9) **What is the name of enzyme that Trimethoprim inhibits to prevent the bacteria synthesis folic acid?**
   a. Methylenetetrahydrofolate dehydrogenase
   b. Dihydrofolate reductase
   c. Folylpoly-gamma-glutamate synthetase
   d. Gamma-glutamyl hydrolase
   e. Serine hydroxymethyltransferase

10) **Which of the following abilities could limit the transmission of a pathogen?**
   a. Ability to form biofilms.
   b. Ability to cause no or very few symptoms.
   c. Ability to survive in a wide range of environments.
   d. Ability to kill the host in a short time period.
   e. Ability to synthesize motility appendages.

11) **You were asked by a relative if there is any laboratory test to evaluate whether she was infected by chickenpox 10 years ago. What would you recommend for her as the best approach to reach an answer?**
   a. Polymerase chain reaction PCR
   b. Antigen detection
   c. Virus culture
   d. Serologic testing
   e. Tzanck smear

12) **In the family Herpesviridae, which one of the following associations is true?**
   a. Human herpes virus 7 and penile cancer
   b. Human herpes virus 2 and penile cancer
   c. Human herpes virus 4 and dorsal root ganglia
   d. Human herpes virus 3 and roseola infantum
   e. Human herpes virus 1 and proctitis in women

13) **Which one of the following statements about members of Herpesviridae family is false?**
   a. Human herpes virus 3 is not usually considered a sexually transmitted infection
   b. Human herpes virus 2 involvement in oral lesions is less common compared to human herpes virus 1
   c. Most human herpes virus 5 congenital infections are asymptomatic
   d. HIV infection is a must for the development of human herpes virus 8 associated sarcoma
   e. Human herpes viruses 1, 5 and 6 can cause mononucleosis-like illness

14) **An example of Aerotolerant anaerobes?**
   a. Campylobacter species
   b. Helicobacter species
   c. Pseudomonas aeruginosa
   d. Bacteroides fragilis

15) **Which of the following characteristics regarding neutrophils is correct?**
   a. Half-life of a few weeks in circulation.
   b. Contains mainly basophilic granules in the cytoplasm.
   c. Mainly found as tissue resident cells.
   d. Main function is in tissue regeneration.
   e. Originates from the myeloid lineage in the bone marrow.

16) **Nystatin is added in Thayer Martin medium in order to kill?**
   a. Neisseria gonorrhoeae
   b. Most gram-negative organisms
   c. Most fungi
   d. Swarming Proteus

17) **Which of the following tests is used for identification and differentiation of members of Enterobacteriaceae from other gram negative bacilli?**
   a. Oxidation test
   b. Methyl Red reaction
   c. Hydrogen sulfide production test
   d. Production of Indole
   e. Catalase test

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

19) **The complement protein that initiates the lectin pathway is:**
   a. MBL
   b. C2b
   c. C1r
   d. C1q
   e. C3b

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

21) Which one of the following statements about human herpes virus 3 is false?

a. Postherpetic neuralgia patients are infectious
b. Reactivation of VZV is not associated with viremia
c. Shingles can be prevented by a vaccine
d. Zoster can affect the eyes
e. Varicella can occur in vaccinated individuals

22) Macrophages can be described by one of the following:

a. Expresses T-cell receptors and B-cell receptors.
b. Can present antigens on MHC II.
c. Has a life span of several hours.
d. Important players of adaptive immunity.
e. Can phagocytose opsonized pathogens only.

23) Which one of the following can be considered as a distinctive feature of viruses?

a. Ability to infect humans, animals and plants
b. Variability in size
c. Genome consisting of a sole type of nucleic acid
d. Universal presence of plasma membrane-derived envelope
e. Facultative intracellular parasitism

24) Which of the following complement components/complexes inhibits complement activation on a surface?

a. C3b
b. C1r
c. C5b-9
d. Factor H
e. Factor B

25) Toll like receptors are:

a. Mostly found in circulation.
b. Proteins that relay anti-inflammatory signals
c. Present only in humans.
d. Proteins that cause pore formation in the surface of the pathogen
e. Proteins involved in pathogen recognition and activation of innate immune responses

26) Which of the following method is preferred to be used to sterilize solutions that likely to be damaged by heat?

a. Filtration
b. Boiling
c. Inspissation
d. Pasteurization
e. Autoclaving

27) Transposons, one is false?

a. Contain insertion sequences for cutting and resealing DNA
b. Occurs between chromosomes and plasmids
c. Segments of DNA that can move from one region of DNA to anther
d. Cause antibiotic resistance genes
e. Chemical mutagen

28) An 18-year-old female presented with fever, sore throat and enlarged, tender lymph nodes in her neck for a duration of 2 days. Her laboratory investigation results were as follows: heterophile antibody was negative, immunoglobulin G against EBNA was negative, immunoglobulin M against VCA was positive, immunoglobulin G against VCA was negative, immunoglobulin G against human herpes virus 5 was positive. What is the most likely explanation of the patient results?

a. CMV is the cause of her symptoms
b. Neither CMV nor EBV can be linked to her symptoms
c. EBV is the cause of her symptoms
d. Either CMV or EBV is the cause of her symptoms, but this can only be determined using virus culture
e. Both CMV and EBV caused her symptoms

29) How many complementarity determining regions (CDR) in one Fc portion of an antibody?

a. 6
b. 3
c. 4
d. 2
e. 0

30) An example of a damage associated molecular pattern (DAMP) is:

a. Lipopolysaccharide
b. Heat shock proteins
c. Mannan
d. dsRNA
e. Pilin

31) Which of the following regarding human microbiota is correct?

a. Human microbiota is made of bacterial species only.
b. Microbiota of the skin is very similar to microbiota of the gastrointestinal tract.
c. Antibiotics do not harm human microbiota.
d. Microbiota of healthy individuals in the community is expected to be different from microbiota of hospitalized individuals.
e. Microbiota of the skin appears around 2 years of age.

32) Which of the following cell types is expected to participate last in the immune response during first exposure to a viral pathogen?

a. Macrophages
b. γδ T cells
c. Neutrophils
d. Natural killer cells
e. Naïve CD8+ T cells

33) One of the following characteristics IS TRUE about Protozoa and helminthes?

a. Contain either DNA or RNA
b. Mitochondria is absent
c. The method of replication is Mitosis
d. The sedimentation coefficient of ribosomes is 70s
e. Have rigid wall containing chitin

34) The relationship between innate and adaptive immunity can be described by one of the following:

a. Adaptive immune responses are activated several days after innate immunity.
b. Innate immunity can recognize foreign antigens while adaptive immunity cannot.
c. Adaptive immunity can recognize foreign antigens while innate immunity cannot.
d. Innate immune responses are activated following the recognition of antigens by adaptive immunity.
e. Adaptive immunity has evolved before innate immunity in all life forms.

35) One of the following is expected to increase phagocytosis of bacteria?

a. Production of antibody proteases.
b. Presence of a bacterial capsule.
c. Deposition of C3b on the bacterial surface.
d. Bacterial biofilm formation.
e. Binding of immunoglobulin Fc portion by bacterial proteins.

36) One of the following Bacteria is an obligate intracellular?

a. Clostridium
b. Mycoplasma
c. Bacillus
d. Chlamydia
e. Mycobacteria

37) One of the following organisms IS NOT considered a normal flora of vagina?

a. Candida albicans
b. Lactobacilli
c. Streptococci
d. Staphylococci
e. Corynebacteria

38) In human herpes virus 6 infection:

a. Multiple sclerosis will follow in the majority of cases
b. The majority of cases occur in adulthood
c. Rose-like rash appears in the majority of cases
d. Transmission occurs via oral secretions
e. Almost all cases are symptomatic

39) Lophotrichous means?

a. Flagella at both poles
b. Flagella all around the cell
c. Tuft of flagella on one poles
d. Tuft of flagella at both poles
e. Flagella at one pole

40) Sterilizing a respiratory therapy equipment is best achieved by?

a. Glutaraldehyde
b. Alcohol
c. Halogens
d. Infra-red rays O e.
e. Hydrogen Peroxide

Answers

1	B	21	B?
2	A	22	B
3	B	23	C
4	D OR A	24	D
5	A OR D	25	E
6	B	26	A
7	E	27	E
8	E	28	A OR C
9	B	29	E
10	D	30	B
11	D	31	
12	B	32	E
13	D?	33	C
14	D	34	A
15	E	35	C
16	C	36	D
17	C	37	
18	B	38	D
19	A	39	C
20	C	40	A