

Bacteriology

Q1: Choose the correct answer

(14 marks)

1-Action of nonpathogenic –bacteria found in the intestine is :

- a- act as part of initiate immunity
- b- Produce vitamin K and B-complex vitamins
- c- catabolism of ingested food
- d- all of them

2-The coagulase test used to differentiate between

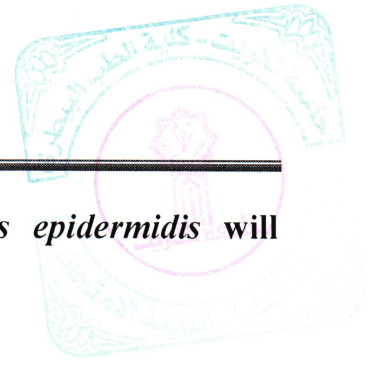
- a- *Staphylococcus epidermidis* from *Neisseria meningitidis*
- b- *Staphylococcus aureus* from *Staphylococcus epidermidis*
- c- *Streptococcus pyogenes* from *Staphylococcus aureus*
- d- *Streptococcus pyogenes* from *Enterococcus faecalis*

3- All of the following bacteria are cause diarrhea except:

- a- *Clostridium perfringens*
- b- *Vibrio cholerae*
- c- *Enterococcus faecalis*
- d- *Escherichia coli*

4- With regard to the cell wall of gram-positive bacteria, which of the following is true

- a- consist of many layers
- b- contain peptidoglycan more in gram negative bacteria
- c- contain of teichoic acids
- d- All of the above



5-By acid-fast staining procedure, *Staphylococcus epidermidis* will appear:

- a- Blue.
- b- Red.
- c- Purple.
- d- Colorless.

6- Although more than 100 clostridia species are recognized

- a- All the species are pathogenic.
- b- All species non- pathogenic
- c- Only *Clostridium tetani* are pathogenic.
- d- All the species are no- hemolysis.

7- Staphylococcaceae characterized by:

- a- Gram-positive cocci
- b- Facultative anaerobes
- c- grow on simple culture media
- d- All of the above.

8- The virulence factors of *Clostridium perfringens* are:

- a- Collagenase
- b- Exotoxin
- c- hemolysin
- d- All of the above

9- E. coli 0157 different from the other species in

- a- O-antigen
- b- K-antigen



- c- Lipoprotein
- d- All of the above .

10- The dominant bacteria in intestine is

- a- *Escherichia* spp.
- b - *Salmonella* spp.
- c- *Clostridium* sp.
- d - *Proteus* spp.

11-*Salmonella typhi* is :

- a- produces H₂S
- b- Non-spore forming
- c- Grow in media contains bile salts
- d- All of the above

12- Which one of the following bacteria is a non-lactose fermenter?

- a- *Klebsiella* spp
- b - *Salmonella* spp
- c - *Enterobacter* spp
- d - *Citrobacter* spp.

13-Which one is not the selective culture media for salmonellae and Shigella

- d- Deoxycholate citrate agar
- b - Xylose-lysine decarboxylase agar
- c - Salmonella –Shigella agar
- d - Blood agar



14-One of the following bacteria is interaellular bacteria:

- a - *E.coli*
- b - *Salmonella sp.*
- c - *Klebsiella sp.*
- d - *Proteus spp.*

Q2: According to the permeability of the cell membrane, several transport systems exist that enable the cell to transport nutrients into and waste products out of the cell. Discuss passive transport? (4 marks)

Q3: Briefly talk about the *outer membrane* that is found in the cell wall of Gram-negative bacteria? (4 marks)

Immunolgy

Q1: Choose the correct answers

(10 marks)

1. All of the following are true about antibodies, EXCEPT :

- a) They are glycoproteins.
- b) They are molecules with a single, defined amino acid sequence.
- c) They fix complement.
- d) They occur on the surface of B lymphocyte
- e) They predominate the primary immune response to antigen

2. Immunoglobulin D (IgD) is:

- a) B cell receptor and is rarely encountered in body fluids
- b) predominant in secretions such as saliva
- c) It has highest concentration in serum
- d) It prevents the adherence of invading microbes to body surfaces

3. The immunoglobulin Joining chain (J-chain) is

- a) only produced by T-Cells
- b) only produced by neutrophils
- c) associated with only multimeric forms of IgM and IgA
- d) associated with IgE f histamine release
- e) only produced by mast cells

4. All of the following are true of antigen EXCEPT :

- a) They contain epitopes.
- b) They will react with antibodies.
- c) They contain antigenic determinants.
- d) They can elicit an immune response.
- e) They contain paratopes

5. CD antigens are

- a) Allow leukocytes to recognize antigen.
- b) expressed only on one cell type
- c) expressed on immune cells to make them for separation.
- d) Functioning as receptors for cytokine and as selectins or integrins

6. A molecule that have the ability to react with immunresponse production but not have immunogenicity called
- adjuvant
 - carrier
 - hapten
 - mitogen
7. A primary immune response produces detectable antibody levels in the blood in:
- 3 days
 - 12 hours
 - 1 week
 - 3 weeks
8. Antibody that reacted with hypersensitivity is:
- IgE
 - IgA
 - IgD
 - IgM
9. Haptens cannot activate T cell or B cells due to
- its low molecular weight antigens
 - its inability to bind to MHC
 - both a and b
 - none of these.
10. A primary role for antibodies in resistance to bacterial infection is
- Antibody dependent cell mediated cytotoxicity
 - Lysis of infected host cells
 - Activation of the alternative complement pathway.
 - Opsonisation for increased uptake by phagocytic cells

Q2: What are the major outcomes of the activation of complement system (biological effects of complement system)? (4 marks)



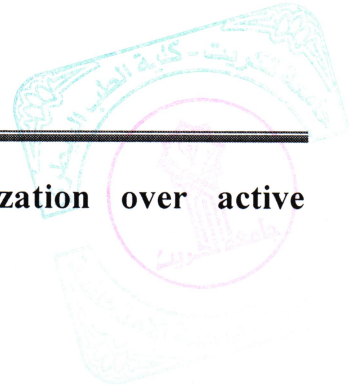
Q3: What is the mechanism type I hypersensitivity? (4 marks)

Virology

Q1: Choose the correct answer

(12 marks)

- 1. Toxoid vaccines are used to protect against:**
 - a) Diphtheria
 - b) Tetanus
 - a. Bothe a and b
 - b. None of the above
- 2. A living microbe with reduced virulence that is used for vaccination is considered:**
 - a) A toxoid
 - b) Attenuated
 - c) Denatured
 - d) Dormant
 - e) Virulent
- 3. Vaccination was invented by**
 - a) Jenner
 - b) Pasteur
 - c) Koch
 - d) Salk



- 4. The main advantage of passive immunization over active immunization is that:**
- It contains primarily IgM.
 - It can be administered orally
 - It provides antibody more rapidly.
 - Antibody persists for a longer period
- 5. Major cellular source of IFN- β**
- Macrophages
 - fibroblasts
 - T cells.
 - NK cells
- 6. IFN- γ plays a major role in activating anticancer immunity, by promoting the:**
- Macrophages.
 - B and T cells.
 - NK cells.
 - All of them
- 7. Interferon type I mediate the early innate immune response to viral. Which of the following viral antigens activates the production of Type I interferon?**
- Capsid protein
 - Double-stranded RNA
 - Double-stranded DNA
 - None of the above
- 8. Vaccines protect from infections by:**
- Destroying the infective agent in the environment
 - Killing the insect vectors responsible for the spread of infection
 - Increasing the immunity of the host
 - None of the above
- 9. Which one of the following antiviral drug is used to treat influenza A?**
- Dextran sulfate
 - Amantadine
 - Ganciclovir
 - Cidofovir



10. Which of the following is easily blocked by antivirals?

- a) Virus penetration
- b) Nucleic acid replication
- c) Virus absorption
- d) Removal of the virus from the cell

11. Which of the following cannot be treated by antiviral drugs?

- a) Tuberculosis
- b) Smallpox
- c) Hepatitis
- d) Warts

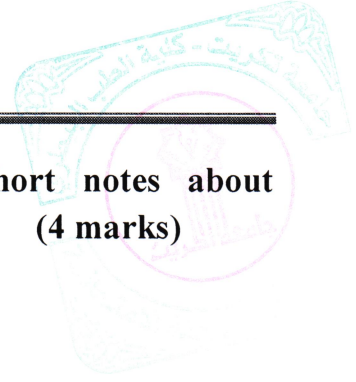
12. Which point in the replication cycle appears most easily blocked by antivirals?

- a) Virus absorption
- b) Virus penetration
- c) Virus RNA and DNA replication
- d) Exit of viruses from the cell

Q2: Define the followings:

(4 marks)

- 1- Defective virus 2- Peplomers
- 3- Capsomeres 4- Virion



Q3: With regard to viral replication, write short notes about Attachment, Penetration, and Uncoating? (4 marks)

Parasitology

Q1: Choose the correct answer

(14 marks)

1- Giardia trophozoite multiples by

- a- schizogony
- b-binary fission
- c- endodyogeny

2- Trypanosoma brucei transmitted by

- a- Glossina
- b- Anophles
- c-Triatoma

3- C.N.S. manifestations appear with

- a- early stage with African trypanosomiasis
- b- last stage with American trypanosomiasis
- c- last stage with African trypanosomiasis



4- Pernicious Malaria caused by

- a- *P. ovale*
- b- *P. falciparum*
- c- *P. vivax*

5- Reservoir hosts for *Trypanosoma gambiens* are

- a- small mammals
- b- sheep and goat
- c- game animals

6- *Giardia* possesses unique biochemical pathways that involve

- a- B vitamins and bile salts and glucose
- b- ethanol, acetate and carbon dioxide
- c- none of the above

7- Site of giardiasis infection in

- a- large intestine
- b- duodenum
- c- liver

8- The infective stage of *Plasmodium* is

- a- cyst
- b- trypomastigote
- c- sporozoites

9- Mode of transmission of *T. gambie* by

- a- contamination of skin abrasion by bug faeces
- b- contamination of skin abrasion by bug saliva
- c- injection the parasite with salive

10- In malaria tropica fever is

- a- irregular high fever

b- 72 hrs. high fever

c- 48 hrs. high fever

11- Damage in heart muscle fibers with Chagas disease due to

a- increasing the numbers of the parasite

b- pernicious anemia

c- auto-antibodies production

12- Fatty diarrhea with giardiasis due to

a- the impaired absorption in the damaged intestinal wall

b- the damage in gall bladder

c- the lack of B12-vitamin

13- Black Water Fever occurs because

a- the parasite infects the kidneys

b- the infection with *Babesia*

c- the red blood corpuscles are destroyed

14-In highly endemic areas with malaria and high mortality among children due to

a- severe anemia

b- very high fever

c- Respiratory distress syndrome

Q2: What the meaning of biological vector and its role in chagas disease? (4 marks)

Q3: Mention the clinical signs with malaria in general? (4 marks)

Fungi

Q1: Choose the correct answer (7 marks)

1- Fungal cell wall is composed of

a-chitin

b-chitin and cellulose

c-hemicellulose

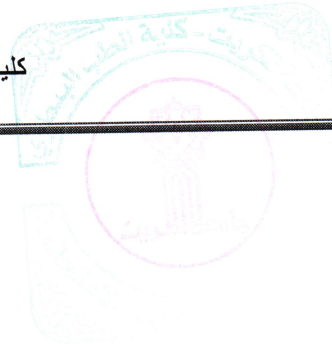
d-only cellulose

2- The optimal growth temperature for molds is

a-37 C° b-25C° c-40C° d-50C°

3- One of the common fungal disease of man is

a-cholera b-plague c-typhoid d-ring worm



4-Sexual reproduction is absent in

- a-phycomycetes
- b-Ascomycetes
- c-Basidiomycetes
- d-Deuteromycetes

5-The common method of reproduction in yeast is

- a-fragmentation
- b-fission
- c-fusion
- d-budding

6-Tinea unguium infected nail causes

- a-jock itch
- b-onychomycosis
- c-Athlete's foot
- d-Mycetoma

7- All of the following are examples of superficial mycoses ,except

- a-Tinea versicolor
- b-Tinea nigra
- c- Black piedra
- d-Sporotrichosis

Q2: What are the classification of fungi ?

(4 marks)

Mycoplasma

Q1: Choose the correct answer:

(3 marks)

1- Mycoplasma like L form bacteria in

- a- both of them sensitive to ampicilin
- b- both of them not have gene responsible for cell wall formation
- c- lose of cell wall
- d- lose of ribosomes

2- Mycoplasma characterizes by

- a- low genetic Content
- b- broad host infection
- c- host specific
- d- no one of them

3- Uroplasma differ than Mycoplasma in

- a- need cholesterol for growth
- b- grow aerobically
- c- produce urease enzyo
- d- caused respiratory infections

Q2: Write briefly about growth requirements of Mycoplasma. (4 marks)



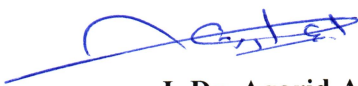
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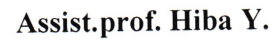
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