

microbiology
dr Mohamed taleb
final 2014



Faculty of Medicine

Department of Microbiology & Immunology

Final Exam

08/01/2014

A

الاسم رباعي باللغة العربية:

Question No	Marks
Question No. 1	10
Question No. 2	10
Question No. 3	20
Question No. 4	10
Question No. 5	10
Question No. 6	10

Total 70

Instructions

1. The exam is in English and should be answered in English.

2. The exam is for 1 hour and 30 minutes.

PLEASE CHOOSE THE BEST CORRECT ANSWER

(45 MARKS)

1. Which of the following is incorrect about Neisseria?
 - a. Are gram-negative diplococci
 - b. *N. gonorrhoeae*, the cause of gonorrhoea
 - c. *N. meningitidis*, the cause of one form of meningitis
 - d. The pathogenicity of Neisseria comes from capsules, pili, and exotoxins
 - e. A and B are correct
2. The following characters are true about Neisseria gonorrhoeae except
 - a. Gram-negative, aerobic bacteria
 - b. Non-motile diplococci
 - c. Oxidase positive organisms
 - d. Air borne infection
 - e. a and b are correct
3. An example on tissue tropism of specific adherence
 - a. *E. coli* K88
 - b. *Plasmodium vivax*
 - c. Group A streptococcal infection to human
 - d. *Streptococcus salivarius*
 - e. None of these
4. Which of the following pathogen not causes urinary tract infection?
 - a. *E. coli*
 - b. *Proteus*
 - c. *Klebsiella*
 - d. *S. saprophyticus*
 - e. None of these
5. Which of the following is not correct about *S. epidermidis*?
 - a. Is a staphylo coccus bacteria
 - b. Catalase positive
 - c. Coagulase negative
 - d. Novobiocin resistant
 - e. Is classic opportunistic pathogen
6. *S. agalactica* is
 - a. G. positive bacilli
 - b. B-hemolytic staphylococcus
 - c. Catalase negative
 - d. Bacitracin sensitive
 - e. All of the above
7. Which of the following is incorrect about *Bacillus anthracis*?
 - a. *Bacillus anthracis* is the causative agent of anthrax.
 - b. People become infected by the cutaneous route, inhalation, by ingestion.
 - c. Its virulence factors include a number of endotoxins and the capsule.
 - d. Its toxin are edema Factor, lethal Factor, protective Antigen.
 - e. Two vaccines are available for anthrax.
8. Which of the following is not an arthropod vector of rickettsioses?
 - a. Mosquito
 - b. Louse
 - c. Tick
 - d. Flea
 - e. None of the above

9. All of the following about *Haemophilus influenzae* is correct except
- The capsulated strain of *H. influenzae* (type b) is most virulent
 - Are divided on basis of capsular polysaccharides or absence of a capsule.
 - The non typeable *H. influenzae* was the main cause of meningitis in children.
 - Pathogenesis is referred to presence of capsule, is a major factor in virulence.
 - Cephalosporin is the antibiotic of choice in treatment.
10. The most frequent causal organism in human bacterial infection
- Vibrio cholerae* & *Clostridium*
 - S. aureus* & *N. gonorrhoea*
 - Mycobacterium* & *Pseudomonas*
 - S. epidermidis* & *S. pyogenes*
 - E. coli* & *S. aureus*
11. How would you distinguish *Pseudomonas* species from *E. coli*?
- Gram staining
 - Morphology
 - Glucose fermentation Versus Respiration
 - All of the above
 - None of the above
12. The most infectious food borne disease is
- Tetanus
 - Dysentery
 - Gas gangrene
 - Botulism
 - None of the above
13. Which of the following about *Bordetella pertussis* is incorrect
- B. pertussis* is oxidase positive but urease negative
 - The most important toxin is pertussigen.
 - Causes whooping cough.
 - Is coccobacillus bacteria
 - Has no vaccination
14. The coagulase test is used to differentiate
- Staphylococcus epidermidis* from *Neisseria meningitidis*
 - Staphylococcus aureus* from *Staphylococcus epidermidis*
 - Streptococcus pyogenes* from *Staphylococcus aureus*
 - Streptococcus pyogenes* from *Enterococcus faecalis*
 - None of the above.
15. Each of the following agents is a recognized cause of diarrhea except
- Clostridium perfringens*
 - Vibrio cholerae*
 - Shigella* dysentery
 - Escherichia coli*
 - None of the above
16. Which of the following about *Shigella* is incorrect?
- Shigellosis characterized by bloody feces
 - Invades the epithelium lining layer
 - Shiga toxin plays as hemolysin
 - Usually treated by ampicillin
 - None of the above is incorrect

17. What is the usual habitat of endospore-forming bacteria that are agents of disease?

- a. The intestine of animals
- b. Dust and soil
- c. Water
- d. Foods
- e. None of the above

18. Many clostridial diseases require a/an environment for their development.

- a. Living tissue
- b. Anaerobic
- c. Aerobic
- d. Low-pH
- e. None of the above

19. Tuberculosis is spread by

- a. Contaminated fomites
- b. Food
- c. Respiratory droplets
- d. vectors
- e. None of the above

20. Salmonellosis

- a. Transmitted from contaminated water
- b. Does not have a human reservoir
- c. Presents as convulsions and itching
- d. Commonly caused by *Salmonella enteritidis*
- e. None of the above is correct

21. The symptoms in scarlet fever are due to

- a. Streptolysin
- b. Coagulase
- c. Pyrogenic toxin
- d. Alpha toxin
- e. None of the above

22. Hemolysis is the partial lysis of red blood cells due to bacterial hemolysins:

- a. Gamma
- b. Alpha
- c. Beta
- d. Delta
- e. None of the above

23. *Streptococci viridans* commonly cause

- a. pneumonia
- b. meningitis
- c. subacute endocarditis
- d. otitis media
- e. All of the above

24. An important test for identifying *Neisseria* is

- a. Production of oxidase
- b. Production of catalase
- c. Sugar fermentation
- d. Beta-hemolysis
- e. All of the above

25. Lecithinase is associated with

- a. *Yersinia pestis*
- b. *Clostridium perferingens*
- c. *Corynebacterium diphtheria*
- d. *Clostridium botulinium*
- e. *Pseudomonas auroginosa*

26. *Vibrio cholerae* is

- a. Bacilli
- b. Aerobic Gram + ve cocci
- c. Anaerobic Gram - ve bacilli
- d. Anaerobic Gram +ve cocci
- e. None of the above

27. Which of the following is pleomorphic, non acid fast bacilli

- a. Lactobacillus
- b. Listeria
- c. Salmonella
- d. Proteus
- e. Corynebacterium

28. Protective antigen (PA) is related strictly to

- a. *S. typhi*
- b. *N. meningitidis*
- c. *B. anthracis*
- d. *L. pneumophila*
- e. *C. trachomatis*

29. Which of the following is considered as the smallest free living bacteria ?

- a. Cocco bacillus
- b. Mycobacteria
- c. Chlamydia
- d. Mycoplasma
- e. Rickettsia

30. Ciprofloxacin is preferably used for treatment of

- a. Listeriosis
- b. Tuberculosis
- c. Toxic shock syndrome
- d. Subacute endocarditis
- e. Anthrax

31. Enterotoxin responsible for food poisoning is secreted by

- a. *E. coli*
- b. Enterobacteriaceae
- c. Streptococci
- d. Staphylococci
- e. None of the above

32. Syphilis is a sexually transmitted disease caused by

- a. Gonococci
- b. Staphylococci
- c. *Treponema pallidum*
- d. Streptococci
- e. None of the above

33. The motile bacteria is

- a. *Salmonella typhi*
- b. *Klebsiella pneumoniae*
- c. *Bacillus anthracis*
- d. *Shigella dysenteriae*
- e. None of the above

34. All the groups of bacteria have cell wall except

- a. Mycobacteria
- b. Mycoplasmas
- c. Clostridia
- d. Staphylococci
- e. Bacilli

35. Which one of the following is a capsulated organism

- a. Bacillus anthracis
- b. Escherichia-coli
- c. Corynebacterium
- d. Chlamydia
- e. None of the above

36. Which of the following is incorrect about endotoxin ?

- a. Associated with LPS
- b. Its toxicity related into polysaccharide part
- c. Mostly, remains associated with the cell wall until disintegration of bacteria
- d. Less potent & less specific than exotoxin
- e. They do not act enzymatically.

37. Which of the following toxins act on ADP ribosylation of elongation factor 2

- a. Shiga toxin
- b. Tetanus toxin
- c. Anthrax toxin
- d. Diphtheria toxin
- e. Pertussis toxin

38. Klebsilla is a genus of

- a. Motile bacteria
- b. G positive
- c. Oxidase negative
- d. Cocci shaped bacteria
- e. Rapidly responded to antibiotics

39. Which of the following bacteria has no Hyaluronidase enzyme ?

- a. Streptococci
- b. Bordetella pertussis
- c. Staphylococcus aureus
- d. Staphylococcus epidermis
- e. Clostridia.

40. Triple toxoid vaccine gives protection against

- a. Diphtheria, tetanus and rabies
- b. Tetanus, whooping cough, Tuberculosis
- c. Whooping cough, tetanus and Diphtheria
- d. Whooping cough, cancer and T.B.
- e. None of these

41. Listeriosis was _____ disease.

- a. Food borne
- b. Water borne
- c. Milk borne
- d. Air borne
- e. None of these

42. Lyme disease is caused by

- a. Chlamydia
- b. Rickettsia
- c. Spirochaete
- d. Coccobacillus
- e. None of these

43. Rheumatic fever is most commonly caused by

- a. Streptococcus viridans
- b. Streptococcus. pyogenes
- c. Staphylococcus. aures
- d. Bordetella pertussus
- e. All of these

44. Penicillin is the drug of choice for

- a. Scarlet fever
- b. Whooping cough
- c. Diphtheria
- d. Cholera
- e. All of these

45. Which of the following invasions act as exotoxin

- a. Streptolysin
- b. Phospholipase
- c. Coagulase
- d. Perussus AC
- e. Neuraminidase

Q2. True or false and correct the false sentences

- a. Gonorrhoea is considered as first most common venereal disease.
- b. Many toxins are so toxic that they may be fatal.
- c. Clostridium botulinum & Haemophilus toxins are examples on exotoxin.
- d. Toxoid is a toxin free of antigenicity part.
- e. Type - I fimbria is a receptor of Enterotoxigenic E.coli .
- f. Collagenase convert fibrinogen to fibrin which cause clotting .
- g. E.coli with the ability to produce extended-spectrum beta -lactamase
- h. N.meningitidis is the second most common cause of bacterial meningitis.
- i. Adenylate cyclase toxin of B. pertussis is endotoxin.
- j. Rocky mountain spotted fever is caused by Rickettsia Typhi .
- k. Rats is not transmitted the murine typhus .
- l. Bacteria which cause a disease in a compromised host only is opportunist; pathogen.
- m. Vibrio cholera always transmitted by eating contaminated food
- n. Escherichia coli stains pink because it has a thin peptidoglycan layer
- o. Mycobacterium tuberculosis is G + ve bacilli ,spore former bacteria

Q3. ANSWER THE FOLLOWING QUESTIONS

a- Tetracycline has bacteriostatic on many bacteria. Name 6 bacteria (3)

1-.....

2-.....

3-.....

4-.....

5-.....

6-.....

b- Fill the space by the most common bacteria cause disease

(10M)

NO	DISEASE	COMMON BACTERIA
1	Moist gangrene	
2	Tuberculosis	
3	Fruncle	
4	Travellers diarrhea	
5	Plague	
6	Neonatal meningitis	
7	Toxic shock syndrome	
8	Whooping cough	
9	Enteric fever	
10	Pontiac fever	

Case study



(7M)

A five years old male admitted into hospital by fever, wheezing productive cough, weight loss, Blood culture showed an increase in WBC, under examination to determine type of bacteria, found pink colour bacteria when stained with gram staining, rod shape under the microscope, not acid fast bacteria, aerobic bacteria, not responded for many antibiotics, with polar flagella. from the above history:

- What is the source of infection?.....
- Its toxicity results from
- It Causes many diseases such that
.....
.....
.....

GOOD LUCK

BY MOHAMMED MUSSEIN TALEB

Parasitology

Q4) PLEASE CHOOSE THE BEST CORRECT ANSWER

1. Each of the following statements concerning Malaria is correct except

- The female anopheles mosquito is the vector
- Early infection, sporozoites enter hepatocytes
- Release of merozoites from red blood cells cause fever and chills
- The principal site of gametocyte formation is the human gastrointestinal tract.
- None of the above

2. In malaria, the form of plasmodia that is transmitted from mosquito to human is the

- Sporozoite
- Gametocyte
- Merozoite
- Hypnozoite
- None of the above

3. Which of the following agent is used to prevent Malaria

- Mebendazole
- Chloroquine
- Inactivated vaccine
- Pentostam[®]
- Spiramycin

4. Which of the following worms is a Cestoda ?

- Ascaris lumbricoides
- Trichuris trichiura
- Pinworm
- Strongyloides stercoralis
- Hymenolepis nana

5. Which of the following is correct about Ascaris lumbricoides ?

- Considered small intestinal roundworm
- Infective eggs hatch in the lower small intestine.
- The eggs are resistant by chemical disinfectant.
- are not killed by heat.
- cough, wheezing, dyspnea are features of its pathogenesis

6. Each of the following statements concerning Ascaris lumbricoides is correct except:

- Is one of the largest nematode
- Can cause pneumonia
- Both dogs and cats are intermediate host of Ascaris lumbricoides
- A. lumbricoides is transmitted by ingestion of eggs
- None of the above

7. Which of the following is incorrect about trichuris trichiura ?

- The female is larger than male
- The larva escapes the shell in the upper small intestine and penetrates the villus
- Mebendazole is not effective for its treatment
- May live as long as 5 to 6 years.
- Eggs passed in feces, embryonate in moist soil within 2 to 3 weeks.

9. Which of the following is incorrect about *Enterobius vermicularis* ?

- a- Diagnosis is made by finding eggs in perianal area, particularly at night
- b- Infection occurs when adult worm are ingested from the environment
- c- Embryonic larvae hatch in duodenum & reach adolescence in jejunum & upper ilium.
- d- Adult worms descend into lower ilium, cecum & colon, live there for 7 to 8 weeks.
- e- The gravid females, containing more than 10,000 eggs migrate, at night.

10. World wide, the most prevalent helminthes to infect human is:

- a- *Enterobius vermicularis*.
- b- *Ascaris lumbricoides*.
- c- Hook worm.
- d- *Schistosoma mansoni*.
- e- None of the above

11. Which of the following is incorrect about Teniasis?

- a- Caused by Cestoda
- b- *Cysticercus* is ingested with poorly cooked infected meat
- c- The adult may live in the small intestine as long as 25 years
- d- Gravid proglottids pass with the feces.
- e- Eggs are consumed by cattle or pigs in which they hatch and form adult worm

12. The pathological changes in Schistosomiasis are caused mainly by :

- a- Immature eggs.
- b- Mature eggs.
- c- Adult worm.
- d- Cercariae.
- e- None of the above

13. Which of the following is incorrect about *Schistosoma mansoni*?

- a- Man is infected by cercaria in fresh water by skin penetration.
- b- The cercaria travel through the venous circulation
- c- They mature and reach the mesenteric (*S. hematobium*) or the bladder (*S. mansoni*)
- d- Eggs germinate & are excreted in feces (*S. mansoni*) or urine (*S. hematobium*).
- e- The larval miracidium hatches out of egg & swims until it finds snail.

14. Infection with *Fasciolopsis buski* is through :

- a- Skin penetration.
- b- Ingestion of egg.
- c- Ingestion of encysted metacercariae.
- d- Eating of infected liver.
- e- All of the above

15. Intestinal amoebiasis in large bowel is characterized by:

- a- Atrophy of villi.
- b- Obstruction of intestine.
- c- Constipation.
- d- Flask-like ulceration.
- e- All of the above

16. Each of the following statements concerning *Giardia lamblia* is correct except:

- a- Has both a trophozoite and cyst stage in its life cycle
- b- Transmitted by fecal oral route from both human and animal sources
- c- Causes hemolytic anemia
- d- Can be diagnosed by the string test
- e- None of the above

16. Each of the following statements concerning *Trichomonas vaginalis* is correct except:

- a. Transmitted sexually
- b. Can be diagnosed by visualizing the trophozoite
- c. Can be treated effectively with metronidazole
- d. Causes bloody diarrhea
- e. None of the above

17. Which of the following is luminal protozoa

- a. *Gardia lamblia*
- b. Pin worm
- c. *Trichomonas vaginalis*
- d. *Blantidium coli*
- e. *Entamoeba histolytica*

18. The infective stage of trypanosomiasis is :

- a. Metacyclic trypomastigote
- b. Epimastigote
- c. Trypomastigote
- d. Amastigote
- e. None of the above

19. Which of the following about leishmaniasis is incorrect

- a. *L. donovani* causes visceral leishmaniasis
- b. The amastigote transform into promastigote in the gut of sandfly
- c. Dogs & rodents are common reservoirs
- d. Pentamidine isethionate is used as drug of choice
- e. Consider as blood protozoal disease

20. Each of the following statements concerning kala-azar is correct except:

- a. Untreated disease results in death
- b. Transmitted by the bite of sandflies
- c. Caused by *L. tropica*
- d. Called Dumdum fever
- e. Consider the most dangerous leishmaniasis

Q5) Fill the following spaces by suitable word

<u>Ascariasis</u>	<u>Teniasis</u>	<u>Bilharzia</u>
	It is one of Cestoda	
		Caused by S.
Treated by Mebendazole		
Transmitted by ingestion of contaminated food		
Round worm		

Q6) Please fill the space of the following table:

(5M)

	Group A	Group B	No
1	Strongloides stercoralis	Entrobilus vermacularis	
2	Ivermectin	Penetrates the skin	
3	Triclabendazole	Is effective in prophylaxis of leishmaniasis	
4	Pin worm	Is used to treat thread worm	
5	Pentamidine isethionate	Causes the commonest helminthic infection	
6	Acidification of media	Is effective in treatment of Fasciola hepatica	
7	Itching and restlessness caused by	Is used in treatment of entrobiasis	
8	Cystogen[®]	Advised for trichomonas vaginalis infection	
9	Metronidazole	Is used to treat cyst of entamebiasis	
10	Pyrental Pamoate	Is used for trophozoite of Gardia	

GOOD LUCK 😊😊😊😊

BY MOHAMMED IFUSHEIN TALEB