

# Bacteriology test bank

## Staphylococci & Streptococci & Enterococcus

1. Which of the following statements is wrong?

Answer: MRSA is responsible for 50% of all community and hospital acquired infections

2. A person was diagnosed as having pharyngitis caused by group A streptococcus. After two weeks, he is present with endocarditis. by what mechanism this has happened?

Answer: molecular mimicry

3. A person with *S. pyogenes* pharyngitis did not take therapy and the illness has gone by its own. After a while he suffers from chest pain. Which of the following is true?

Answer: Could be prevented if it was treated initially with antimicrobials

4. 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..

Answer: e not sure

5. 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*.

Answer: E

6. 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

Answer: E

7. 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.

Answer: B

8. 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

Answer: E

## **Mycobacteria**

1. Which of the following can be used to culture *Mycobacterium* species?

Answer: Middlebrook Agar

2. Which of the following is a rapidly growing mycobacterium?

Answer: *Mycobacterium abscessus*

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.

Answer: C

## **Mycology & Fungal infections**

1. Aflatoxin is mainly produced by:

Answer: *Aspergillus* spp

2. Which of the following is true regarding candida

Answer: They are found as yeast in mucus membranes and pseudo hyphae when they invade tissues

3. Which of the following is not part of the normal flora?

Answer: *Cryptococcus neoformans*

4. Which of the following is true regarding sporotrichosis?

Answer: The causative agent is commonly introduced into wounds while gardening

5. 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*

Answer: B

6. 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*.

Answer: E

7. 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.

Answer: A

8. 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

Answer: B

## **Protozoa**

1. Which of the following is associated with flask-shaped ulcer in the intestines?

Answer: *Entamoeba histolytica*

2. What is the mode of multiplication in *Giardia Lamblia*?

Answer: Binary fission

3. The phase that follows sporozoites in plasmodium life cycle is:

Answer: Schizont

4. 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*.

Answer: B

5. The infectious stage of plasmodium is

- a. Merozoites
- b. Schizonts
- c. Trophozoites
- d. Sporozoites
- e. Gametocyte

Answer: D

6. Vector for leishmaniasis is :

- a. *Anopheles mosquito*
- b. Tick
- c. Tsetse fly
- d. Mite
- e. Sand fly

Answer: E

7. 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

Answer: E

## Parasites

1. Which of the following is an intracellular helminth that resides in muscle cells?

Answer: *Trichinella spiralis*

2. Which of the following is false about *Trichomonas vaginalis*?

Answer: It is sexually transmitted in the cyst phase

3. The definitive host of *Echinococcus granulosus* is:

Answer: Dogs

4. A trematode which is pathogenic through eggs:

Answer: *Schistosoma mansoni*

5. The most common helminthic infection among children is:

Answer: *Enterobius vermicularis*

6. Symbiosis is:

Answer: All of the above (parasitism + mutualism + commensalism)

7. 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

Answer: E

## Gram positive rods (spore +)

1. Which of the following species can cause flaccid paralysis?

Answer: *Clostridium botulinum*

2. 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

Answer: D

2. 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

Answer: B

### **Gram positive rods (spore -)**

1. A female present with urethral infection with discharge. Under the microscope, gram-negative diplococci can be seen. What are these bacteria?

Answer: Neisseria gonorrhoeae

2. Which of the following does not have an Enterobacteriaceae antigen?

Answer: lactobacilli

3. Gram-positive bacteria that appear as hyphae under the microscope:

Answer: Actinomyces

4. The predominant bacterial genus in the vagina is:

- a. Enterococcus
- b. Escherichia
- c. Lactobacillus
- d. Mycobacterium
- e. Corynebacterium

Answer: C

## Enterobacteriaceae

1. A patient is present with a watery diarrhea after two hours of eating a meal. Which of the following statements is wrong?

Answer: Symptoms will last for a week

2. 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:
- Lactobacillus sp.
  - Salmonella typhi.
  - Campylobacter jejune
  - Enterococcus faecalis
  - Escherichia coli.

Answer: B

3. Enterobacteriaceae share one of the following characteristics:
- All are hospital acquired.
  - All cause infection of the gastrointestinal tract.
  - All are part of the normal gastrointestinal microbiota.
  - All are considered multi drug resistant.
  - All are gram negative rods.

Answer: E

5. Which of the following bacterial genera does not contain the enterobacterial common antigen (ECA)?
- Lactobacilli
  - Shigella
  - Salmonella
  - Escherichia
  - Yersinia

Answer: A



## Campylobacter, Helicobacter and vibrio

1. We cultured the blood of a person with bloody diarrhea and bacteria grew at 42° C and at 5% oxygen. What are these species?

Answer: *Campylobacter jejuni*

2. The urea breath test is done for the presence of which bacteria?

- a. *Helicobacter pylori*
- b. *Shigella sonnei*
- c. *Treponema pallidum*
- d. *Campylobacter jejuni*
- e. *Streptococcus pneumoniae*

Answer: *H.pylori*

3. 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

Answer: B

4. A stool sample from a patient presenting with bloody diarrhea was analyzed. A fastidious curved gram-negative rod which only grew at 6% CO<sub>2</sub> 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*

Answer: D

## **Pseudomonas and opportunistic pathogens, Legionella, Bortedella**

1. Which of the following is the most common cause of wound infections?

Answer: pseudomonas aeruginosa

2. 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.

Answer: A

3. 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 causing the infection is most likely

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

Answer: A

4. 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

Answer: B

## **Spirochetes and intracellular pathogens**

1. Which of the following is true regarding lyme disease?

Answer: Symptoms are fever and rashes

2. Which of the following is false regarding chlamydia trachomatis?

Answer: It can't be transmitted by inanimate objects

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

Answer: A

3. Which of the following infections is zoonotic

Answer: Bartonella

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

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

Answer: A

5. 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 gonorrhoea*
  - c. *Escherichia coli*
  - d. *Mycoplasma genitalium*
  - e. *Chlamydia trachomatis*

Answer: B

**Made by**  
**Zaidan & Al Hurani**