

**Salahaddin University-Erbil**

**College of Science**

**Department of Biology**

**4<sup>th</sup> Year Students**



**Subject: Medical Bacteriology**

**Q.1) Complete the following statements with suitable words:**

- 1- Unlike salmonellae, shigellae rarely penetrate through the wall or enters the .....
- 2- The main mechanisms of bacterial pathogenicity are.....and.....
- 3- ....., the haemolysin that causes  $\alpha$ -haemolysis in *Streptococcus pneumoniae* may also contribute to pathogenesis.
- 4- Biofilms protect bacteria from both.....and.....
- 5- Antibiotics such as penicillin and cephalosporin contain a chemical structure called ....., which attaches to the enzymes that cross-link peptidoglycans.
- 6- Meningococcus and ..... are oxidase positive.
- 7- *Helicobacter pylori* attaches to the mucus-secreting cells of the .....
- 8- Elementary bodies of Chlamydiae are metabolically .....

**Q.2) Write the scientific explanation behind the following statements:**

- 1- *Mycobacterium tuberculosis* causes disease in highly oxygenated tissues.
- 2- *Mycoplasma pneumoniae* can assume a variety of shapes.
- 3- There are few antimicrobials that act on the cell membrane of the bacteria.
- 4- The plaque produced by *Yersinia pestis* is called bubonic plaque.
- 5- Plasmid-mediated resistance is very important from a clinical point of view.

**Q.3) Define the followings:**

- |                            |                    |                       |
|----------------------------|--------------------|-----------------------|
| 1- Guillain-Barré syndrome | 2- Cold agglutinin | 3- Atypical pneumonia |
| 4- Staphylozanthin         | 5- Scrofula        |                       |

**Q.4) State the role of the followings in the bacterial pathogenesis:**

1-Tetanospasmin    2-Pyocynin of *Pseudomonas aeruginosa*    3- Hyaluronidase  
4- Eosilon toxin of *Clostridium pefrengenes*    5- Endotoxin of gram negative bacteria

**Q.5)** What is the difference between lepromatous and tuberculoid leprosy according to immune response and the number of bacterial cells.

**Q.6)** Mention toxin mediated diseases in *Staphylococcus aureus*.

**Q.7)** There are three medically important gram-negative rods that have significant animal reservoirs, state them and their reservoirs.

**Q.8)** Write the main differences between endotoxin and exotoxin according to the source, chemistry, toxicity and antigenicity.

**Q.9)** Count the four metabolic processes that are common features of enterobacteriaceae family.

**Q.10)** State the three types of *Salmonella* infections.

**Q.11)** Write the mechanism action of Exotoxin A of *Pseudomonas aeruginosa*

**Q.12)** State the three medically important gram-negative rods that have significant animal reservoirs.

**Q.13)** The pathogenesis of cholera is dependent on two factors mention them.

**Q.14) Give an example to the followings:**

1-An acid fast bacterium causing tuberculosis.

2-An enzyme produced by a gram negative bacterium has role in kidney stone formation.

3-A gram rod shaped encapsulated pyogenic bacterium.

4- A specific medium used for *Vibrio cholera* diagnosis.

5-A human disease transmitted by the four Fs—(fingers, flies, food, and feces).

6- A gram negative rod shaped bacterium causing undulant fever.

**Q-15) *Staphylococcus aureus* has several important cell wall components and antigens state them briefly.**

**Q-16) Explain briefly the mechanisms of resistance in bacteria to antimicrobial drugs.**

**Q.17) The members of the normal flora play a role both in the maintenance of health and in the causation of disease in three significant ways, explain briefly.**

**Q.18) state the main features of bacterial exotoxins and endotoxins**

**Q.19) There are two important antigens of  $\beta$ -haemolytic streptococci, count them.**

**Q.20) Group A streptococci (*S. pyogenes*) produce five important toxins and haemolysins. Explain them briefly.**

**Q.21) *S. pyogenes* causes three types of diseases. State them with an example for each disease.**

**Q.22) Meningococci have three important virulence factors. Count them and mention the role of each**

**Q.23 Determine the causative agents of the following diseases:**

**1- Ophthalmia neonatorum      2- Acute Glomerulonephritis      3- Scaled skin Syndrome**

**Q.24) What is the role of *Yersinia* outer proteins in the pathogenesis?**

**Q.25 How *H. pylori* produces gastritis and peptic ulcers?**

**Q.26 What are the cell wall components of *Mycobacterium tuberculosis*?**