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**PAPER BACTERIOLOGY**

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**Q1:**

**PROKARYOTIC CELL**

1. It can be define as it is a unicellular organism which lack organelles and other internal structures or bounded structure
2. it have no true nucleus
3. they have a single chromosome
4. having DNA ( double stranded) which is located in nucleoid
5. they have small size approximately 10­-100 times smaller than eukaryotic cell
6. lysosomes , peroxisomes , microtubules , and endoplasmic reticulum are absent
7. moreover they lack different types of organelles like Golgi apparatus , ribosomes , vesicles are absent
8. transcription occurs in cytoplasm
9. they may have Pili and fimbriae

**EUKARYOTIC CELL**

1. It can be define as it is a multicellular organism having true nucleus and other organelles and genetic materials
2. It size is 5-100um
3. They contain more than one number of chromosomes
4. Sexual reproduction is present
5. Pili and fimbriae are absent
6. Transcription occurs inside the nucleus
7. Nuclear membrane is a selectively membrane
8. Ribosomes are present in larger size
9. Mitochondria is present

**Q2:**

**DIFFERENT SHAPES OF BACTERIA**

There are three different shapes of bacteria

1. **COCCUS**: it is known as Cocci which has oval or spherical shape

It is a gram positive bacteria which can cause different type of diseases like pneumonia , otitis media , food poisoning and various skin diseases

1. **BACILLI**: it is known as bacillus which has a rod shape

It is a gram positive bacteria which can cause different diseases like abscesses , bacteremia , ear infections and many more

1. **SPIRILLIUM**: it has a helical or spherical shape

it is a gram negative bacteria in the family spirillacese of the nitrosomonadales of betaproteobacteria

It can cause different disease include STD, Borrelia burgdorferi cause a Lyme disease.

**Q3:**

**DIFFERENCE BETWEEN GRAM POSTIVE AND GRAM NEGATIVE BACTERIA:**

**GRAM POSITIVE BACTERIA**:

1. Gram positive bacteria are the bacteria which gives a positive result during gram staining test
2. Having a thick peptidoglycan layer
3. Have no outer lipid membrane
4. It can provide a rigid exoskeleton for the protection against osmotic and mechanical Lysis
5. It can retain the crystal violet color
6. Gram positive bacteria are less resistant to antibodies as compared to gram negative bacteria
7. Size varies from 20-80nm

**GRAM NEGATIVE BACTERIA:**

1. Gram negative bacteria are the bacteria which gives a negative result during gram staining test
2. Having thin peptidoglycan cell wall
3. High resistive to antibiotics
4. Size varies from 2-10nm
5. It can’t retain the crystal violet color
6. Having outer lipid membrane