

Name Gul shad
I.D 13766
Subject Medical microbiology
Assignment Mid Term Summer
Department B.s Dental
Instructor Ma'am pashmina

Q.1/. Illustrate what are the differences between prokaryotes and Eukaryotes?

Ans/ PROKARYOTES AND EUKARYOTES:

Prokaryotic Cell	Eukaryotic cell
Size is 0.1- 5.0 um	Size is 5-100 um
Nucleus is absent	Nucleus is present
Membrane bound nucleus absent.	Membrane bound Nucleus is present.

One chromosome is present, but not true chromosome plastids	More than one number of chromosomes is present.
Unicellular	Multicellular
Lysosomes and Peroxisomes absent	Lysosomes and Peroxisomes present
Microtubules absent	Microtubules present
Endoplasmic reticulum absent	Endoplasmic reticulum present
Mitochondria absent	Mitochondria present
Cytoskeleton absent	Cytoskeleton present
Ribosomes smaller	Ribosomes larger
Vesicles present	Vesicles present
Golgi apparatus absent	Golgi apparatus present

Q.2/ What do you know the Normal Flora? Write down it's advantage and disadvantage.

Ans/ NORMAL FLORA:

Normal flora are the microorganisms that live on another living organism (human or animal) or inanimate object without causing disease. The human body is not sterile; we become colonised by bacteria from the moment we are born. We are covered with, and contain within our intestines, approximately one hundred trillion bacteria that form the normal flora of our bodies. This normal flora helps to prevent us becoming colonised with more dangerous bacteria, which might lead to infection.

Types of normal flora:

1. Commensal microflora:
2. Mutualistic microflora:

3. Opportunistic microflora:

Commensal microflora:

- These microorganisms get benefits from human host and give neither benefits nor harmful effects to host.
- Majority of normal flora are commensal types

Mutualistic microflora:

- These microorganisms get benefits from host and at the same time give benefits to the host.

Opportunistic microflora:

These microorganisms, under normal conditions live as commensal on host body but they cause diseases if opportunity is available.

For example; Normal flora of GI tract i.e. E. coli causes urinary tract infection (UTI), if the site of habitat is changed.

Normal Flora Advantage

These normal flora provide us with many benefits, which include: They prevent colonization by pathogens by competing for attachment & **nutrients**. Some

synthesize **vitamins** that are absorbed as **nutrients** by the host (e.g. K & B12). Some produce substances that inhibit pathogenic species.

Normal Flora Disadvantage:

Many elements of the **normal flora** may act as opportunistic pathogens, especially in hosts rendered susceptible by rheumatic heart disease, immunosuppression, radiation therapy, chemotherapy, perforated mucous membranes, etc. The **flora** of the gingival crevice causes dental caries in about 80 percent of the population.

Q.3/Different Between:

Archaea :

1/ Archaea is a group of primitive prokaryotes that based on their distinct characteristics form a separate domain from bacteria and EUKARYOTES.

2/Most archaea are extremophile and are found in extreme environments like the deep sea, mountain, hot springs, salt brine, etc.

3/The fatty acids membrane lipids of archaea are bound to glycerol by ether bonds

4/Thymine is absent in the t-RNA of archaea.

5/Introns are present in the chromosome of archaea.

BACTERIA:

1/Bacteria are single-celled primitive organism that form a domain of organisms diverse in shape, size, structure, and even habitats.

2/Bacteria reside in different habitats ranging from soil, water, to inside living and non-living organisms.

3/The fatty acids in membrane lipids of bacteria are bound to glycerol by ester bonds.

4/Thymine is present in the t-RNA of bacteria.

ENDOTOXIN AND EXOTOXIN:

Endotoxins are the part of the cells, as they are associated with the outer membrane of the Gram-negative bacteria, and is released at the cell lysis, while **exotoxins** are secreted within the cell and are active in Gram-positive and Gram-negative bacteria. **Exotoxins** are released from the cell.

HOST AND PARADISE:

A **parasite** is a living organism, which takes its nourishment and other needs from a **host**; the **host** is an organism which supports the **parasite**. ... The **hosts** vary depending on whether they harbor the various stages **in parasitic** development.

PLANT CELL AND ANIMAL CELL:

Animal cells

Animals are made up of millions of cells. Animal cells have an irregular structure and are made up of four key parts:

- **Nucleus** – This contains genetic material (DNA), and controls the cell's activity.
- **Cell membrane** – A flexible layer that surrounds the cell and controls the substances that enter and exit.
- **Cytoplasm** – A jelly-like substance where the chemical reactions happen.
- **Mitochondria** – This is where energy is released from the food molecules.

Plant cells

Plants are also made up of millions of cells. Plant cells have a nucleus, cell membrane, cytoplasm and mitochondria too, but they also contain the following structures:

- **Cell wall** – A hard layer outside the cell membrane, containing cellulose to provide strength to the plant.
- **Vacuole** – A space inside the cell that is used to store substances and help the cell keep its shape.
- **Chloroplasts** – Structures that contain the green pigment **chlorophyll**, which are a key part of **photosynthesis**.

PROTOZOA AND FUNGI:

PROTOZOA:

1/Protozoa are a group of organism in kingdom protists which are unicellular animals.

2/Protozoa are unicellular.

3/Protozoa locomote by flagella,cilia, pseudopodia.

4/Protozoa cell wall possessed pellicle which helps in protection and locomotion.

FUNGI:

1/Fungi are a group of organism which are multicellular Eukaryotes.

2/Fungi are mainly multicellular.

3/Fungi move through flagella,air or water.

4/Fungi cell wall possesaes chitin