**Medical Microbiology. Dental 4th semester.**

**Mid-term assignment paper.**

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*Instruction; Write briefly and up to the point. All questions carry equal marks.*

1. Explain Structure of bacteria in detail ? also Explain some cell organelle of bacterial cell and its function
2. What is Bacterial culture media ? write down some types of bacterial culture media in detail.?
3. What is the difference between Sterilization and disinfection ? write down some methods used for sterilization ?
4. Write a note on Structure of fungi in detail ?
5. What are few Hospital based infections that can be transfer to others due to un hygienic condition ? Explain with an example ?

**ANS NO.1;-**

Bacteria is a single cell organism which perform all life activities by a single cell.

**Structure of bacteria;-**

Bacteria is made from cell wall, cell membrane and cell organelles.

The outermost part of bacteria is cell wall. Cell wall of a bacteria is made of murine also known as peptidoglycan.

Cell membrane is the second outer most part of bacteria

It also have cytoplasm which start from cell membrane to nuclear membrane but the nuclear membrane is not the true membrane.

**Types of bacteria;-**

There are two types of bacteria;-

**1. Gram positive bacteria; -** It has long peptidoglycan chain.

**2. Gram negative bacteria; -** It has short peptidoglycan chain.

**Bacterial cell organelles and its function;-**

**Flagella; -** There are only one or two flagella in single cell bacteria and responsible for motion of bacteria.

**Pilli; -** There are many pili in a single cell bacteria it also responsible for motion.

**Mitochondria; -** Power house of the cell because they produce energy for the cell.

**Ribosomes; -** Responsible for protein synthesis.

**Lysosomes; -** It clean the cell and digest wastes from the cell by hormonal function.

**Chromosomes; -** It is genetic materials of the cell.

**Plasmid;-**It is ring and extra cellular organelles of the cell.

**ANS NO.2;-**

**Bacterial culture media;-**

A media in which bacterial cell is cultured is called bacterial culture media.

In bacterial culture media the following equipment’s are necessary…

Media container,

Media bath,

Media nutrients,

Hormones,

Incubator,

Refrigerator,

Cell counter,

Liquid nitrogen etc.

**Types of bacterial culture media; -** media is used.

Other known types are…

Agar media,

Basal media,

Enrichment media,

Storage mediate.

**1. Solid media;-**This is the type of media in which in which solidified agar is used for culturing.

**2. Liquid media;-**This is the type of media in which liquid are semi liquid gel like.

**ANS NO.3;-**

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| --- | --- |
| **Disinfection**  | **Sterilization** |
| Chemicals are used for disinfection  | Heat are used for sterilization  |
| Cell wall lysis occurred during disinfection.  | Whole organisms destroy.  |
| It is used on nonliving things and heat cannot be used. | It is used on living things and heat can be used.  |
| Antiseptic are used as chemical to dis infect.  | Chemical are not used.  |
|  |  |
|  |  |

**Method for sterilization**

**Physical sterilization; -** Heat is used in physical sterilization**.**

**Chemical sterilization; -** It is two types gasses and liquid.

**Mechanical sterilization; -** Filter are used.

**Biological sterilization; -** Viron and prion are used.

**ANS NO.4;-**

 **Structure of fungi;-**

Fungi has the following characteristics

The cell wall of fungi is composed of chitin.

Cell membrane is the second outermost part of the fungi cell

Fungi are heterotrophs and also saprophytes.

They lack chlorophyll.

They are symbiotic

Fungi consists of hyphae singular hype.

The mass of hyphae consists of mycelium.

Hyphae are septate hyphae and conoceptic hyphae.

Conoceptic are multinucleated.

**ANS NO.5;-**

There are many hospitalized condition which can be transfer from infected person to a healthy person like viral , bacterial and fungal infection etc. these infections include corona virus , Ebola virus , HIV , influenza virus , pneumonia , TB etc. these infection may transfer due to following unhygienic conditions ,

Not cleaning the hand after use of toilet

 Not get rubbish

Not washing clothes and bedding frequently

Not storing food properly etc.