**Mid-Term Assignment (Spring-2020) (BS-MLT 2nd Sec-A & Sec-B)**

**Course Title: Basic Microbiology Instructor: Mr. Fazli Zahir Mian**

**Time: 48 Hours**

**Q1: Fill in the Blanks.**

1. \_\_Microorganism\_\_ are living things which individually are too small to be seen with naked eye.
2. The scientific study of algae is called \_\_\_\_\_\_\_\_\_ Phycology \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Diseases causing living organisms are known as \_\_\_\_ Pathogen\_\_\_\_\_\_\_\_\_.
4. \_ Ribosomes \_\_cell organelle is present both in prokaryotic and eukaryotic cell.
5. The power house of cell is known as \_\_Mitochondria\_\_\_\_\_\_\_\_\_\_.
6. \_Binary Fission\_\_ is the most common method of asexual reproduction in microbes.
7. Log period of bacterial growth is also known as \_\_\_\_\_Exponent\_\_\_\_\_\_\_\_\_\_\_\_.
8. \_\_Log\_\_ phase of microbial growth is metabolically active and is for industrial purposes.
9. Shrinkage of cell’s plasma membrane caused by osmotic loss of water is called \_Plasmolysis\_.
10. For synthesis of cellular material nitrogen and sulfur is needed for \_Protein\_ synthesis.

**Q2: Write short notes on the following**

1. Mitochondria

Answer:

 Mitochondria:

* + Mitochondria is the part the part of the cell
	+ It is produce energy in the form ATP
	+ Structure
	+ Rod-shape with a double membrane
	+ Outer membrane is smooth and regular while inner membrane is folded to form critic
	+ Function
	+ Know is the power of the cell
	+ Release energy as it the set of aerobic respiration
	+ Energy generated or released in form of ATP.
1. Nucleus

Answer:

* Nucleus is the part of cell
* It is control all function of the cell
* Inside of the cell present all the cell information like
* Chromosome. DNA. Gene
* Protects DNA (instruction for building proteins)
* Inter phase
* Nucleoprotein fibers – chromatin
* Nucleoplasm
* Nuclear envelop
* Outer membrane Ex- ribosome
* Nuclear pores
* RNA. Proteins
1. Budding

Answer:

* It is the of bacteria reproduction
* The is asexual reproduction
* The bacteria one parents’ cell is converted two daughter cell
* That living organism involve asexual reproduction like bacteria. Yeast. Protozoa
1. Culture media:

Answer: The food material or substance required for growing microorganism is called cultured media

 Culture media is the special technique of the bacteria growth

 There are three form of culture media

 1 Solid media 2 Liquid media 3Semi solid media

 Basic requirements of culture media

 Nutrients

 1 Energy source

 2 Carbon source

 3 Nitrogen source

 Minerals

 Sulphate, phosphate, chlorides, carbo notes, k ,Mg ,and CA

 A suitable pH

 7.2 -7.4

Type of culture media

 Basic media

 Enriched media

 Anaerobic media

Temperature (need specific temperature need for growing microbes)

 1 Psychrophils 2 Memphites 3 Thermophiles

1. Growth factors

Answer:

Growth factor is a naturally occurring substance cable of stimulating cellular

Some essential organic compound an organism is directly obtain from environment

Some chemical and physical instrument needed for growth factor

It is needed optimum temperature for growth factor.

**Q3: What is bacterial growth? Discus different phases of bacterial growth**

The bacteria growth is proliferation of bacterium into two daughter cells, in a process called binary fission.

There are four phases of bacteria growth

1. Log Phase

No increasing the number of living cell

Bacteria arrangement

Synthesis protein and vitamins

Structure size

Do not divide

1. Lag phase

Exponential increase in number of cell of living bacteria

DNA replication

Number of cell increase

1. Stationary phase

Overall population remains

Relatively stable

Cell nutrients and build up toxic waste

Cell growth =cell death

1. Death phase

Total number of ridable cells decrease

99% of cell die at constant

Depth is exponential

Much slower rate than growth

Haris khan

Good luck.