

In the name of Allah who knows the beatings of our hearts.

Name:Itizaz Hassan

ID:16662

Department:BS MLT

Semester:2nd

Paper:Microbiology

Date:13:04:2020

Instructor:Sir Main Zahir Fazli

Qno1: Fill in the blanks.

Answers:

- a. Micro Organism
- b. Phycology
- c. Pathogens
- d. Ribosomes
- e. Mitochondria
- f. Binary Fussion
- g. Logarithmic Increase
- h. Log Phase
- i. Plasmalysis
- j. Protein

Qno2:Write a shorts note on the following.

A:Mitochondria:

- It is a double membrane bounded organelle found in the cytoplasm of eukaryotic cell both plant and animals.
- Outer membrane
- Inner membrane
- The outer membrane has many small spaces called intermembrane space which allow the entry and exit of chemical substances.
- The inner membrane is folded inwards, the outer boundary of inner membrane is called Cristae and the inner boundary of membrane is known as Matrix.

FUNCTION:

- a) As we know that Mitochondria is the power house of cell which means it make energy in the form of ATP from cellular respiration.

2: Nucleus:

- It is the most important organelle of eukaryotic cell.

- In animals cell it is present in the center of cell.
- In plants cell it is present to the side of the cell because of the large vacuole.

STRUCTURE :

- Nucleus is surrounded by a double layer of membrane known as nuclear membrane.
- Inside the nucleus a small bodies is present known as Nucleoli.
- Chromosome are small bodies present inside the Nucleolus which contain DNA.

FUNCTION:

- Nucleus control all the metabolism activities.
- Chromosomes has gene which carries hereditary information.

3:BUDDING:

- In Microbiology budding is define as it is the form of asexual reproduction and form of bacterial division. In budding a new individual organism form from some generative point of the parent organism in the form of buds or outgrowth because of mitosis.
- Budding can form from any point of the body.
- When buds get mature it is Separated from the parental point to exist independently.
- Budding is also known as the characteristics of unicellular organism like yeast, bacteria and Protozoans.

4:CULTURE MEDIA:

- Culture media is a specific media used in the laboratories of Microbiology to develop or form different kind of microorganisms.

OR

- It is the process of making a different kinds of new microorganisms in the Microbiological laboratories.
- Culture media is also known as growth media because the growth of new kind of microorganisms take place.
- Growth media or culture media is a composition of different important nutrients.
- The Culture may be solid or liquid.
- The solid culture is composed of a brown jelly like substance known as Agar.
- There are two types of culture media.
- Cell Culture:
- _____ In cell culture specific type of cell is taken from plants or animals.
- Micro biological Culture :
- _____ It is a media which are used for the growth of microorganisms such as bacteria and fungi.

5:GROWTH FACTORS:

- It is a naturally specific substance which is used for stimulating cellular growth.
- It is very important for regulating the various faction of cell and other important cellular processes.

- Growth factors may be protein or hormones.
- Growth factors are organic compound which help in stimulating cellular growth but does not synthesize itself like vitamins, amino acid etc.
- Organism which requires a specific nutrition is known as fastidious organism.
- Fastidious organism only grow when a specific nutrients are included in diet.

Qno3: What is bacterial growth? Discuss the different phases of bacterial growth?

- Answer:
- Bacterial Growth: It is the process in which the numbers, population or size of the bacteria is increase is known as bacterial growth.
- Bacteria growth is increase in bacterial number which does not refer to an increase in size of individual cells.

Phase of Bacteria Growth: Bacterial growth varies from different phases which are the following.

A: Lag Phase:

- In lag phase bacteria can last for 1 hours or several days.
- In lag phase no cell division occurs.
- In lag phase cell are not dormant which means they are not inactive or inert, instead they are active and alert.
- During this phase cell change very little because cell do not immediately reproduce in new medium.
- And also during this phase DNA and enzyme are synthesize.

B: Log Phase:

- It is the phase in which population grows in logarithmic fashion that's why period of growth is also known as logarithmic increase.
- Sometime it is also known as logarithmic phase or exponential growth.
- Period characterized by cell doubling sensitive to adverse condition.
- Cellular respiration is active during this period which means it make ATP which is a source of energy.

C: Stationary Phase:

- It is the phase which means the period of equilibrium, balance or stability.
- During this phase the metabolic activities of surviving cell is slow down, it is because of discontinuity of exponential growth is not always clear.
- During Stationary phase the growth rate and death rate are equal.
- Stationary phase has continuous culture which is used in industrial fermentation.
- Stationary phase help in varies ways like in exhaustion of nutrients, accumulation of waste product and harmful changes in PH.

D: Death Phase:

- It is the phase in which bacteria die and also known as logarithmic decline phase. During this phase bacteria die because of the lack of important nutrients for metabolism activities, and also because of environmental temperature rapid changes, which means the sudden increase and decrease in temperature.
- During this phase some bacteria die completely and some retains surviving cells and while other retains for a few days.

THE END:

THANK YOU.