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***\*paper:::::::Microbiology.***

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***Q1:***

***Ans: first of all objective Answers.***

1. **Microorganism.**
2. **Algology.**
3. **Pathogenic.**
4. **Ribosome.**
5. **Mitochondria.**
6. **Binary fission.**
7. **Exponential phase.**
8. **Stationary.**
9. **Plasmolysis.**
10. **Protein.**

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***Q2:***

***Ans:* “Mitochondria” (power house)**

\*produces energy through chemical reaction breaking down fats and carbohydrates.

\*control level of water and other material in cell.

\*Recycles and decomposes protein fats and carbohydrates protein.

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 **“ Nucleus”**

\*control center of the cell.

\*contains DNA.

\*surrounded by a double membrane.

\*usually the easiest Organelle to see under a microscope.

\*usually one per cell.

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 **“ Growth factors”**

**\*Availability of nutrients and H2O.**

**\*Temperature.**

**\*Atmosphere-O2 and CO2.**

**\*H-ion concentration.**

**\*Moisture and drying.**

**\*Osmotic effects.**

**\*Radiation.**

**\*Mechanical and sonic stress.**

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 **“Budding”**

\*Budding is the formation of a new organism through a bud of the parent organism.

\*A type of vegetative propagation.

\*The parent organism remain the same after detaching of the new organism from the parent.

\*An asymmetric division.

\*Found in parasites ,fungi, plant and metazoans like animal.

\*Can be induced artificially.

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 **“Culture and media”**

**Culture:**is the term given to microorganisms that are cultivated in the lab for the purpose of identifying and studying them.

**Media:**is the term given to the combination of ingredients that will support the growth and cultivation of microorganisms by providing all the essential nutrients required for the growth.

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***Q:3***

***Ans:***

 **“Bacteria Growth”**

When bacteria are inoculated into a liquid growth medium, we can plot of the number of cells in the population over time.

 **Four phases of bacteria growth**

1. **Lag phase.**
2. **Log phase.**
3. **Stationary phase.**
4. **Death phase.**

 **Lag phase**

* + Period of adjustment to new conditions.
	+ Little or no cell division occur, population size doesn’t increase.
	+ Phase of intense metabolic activity, in which individual organism grow in size.
	+ May last form one hour to several days.

 **Log phase**

* + Cells begin to divide and generation time reaches a constant minimum.
	+ Period of most rapidly growth.

No of cell > No of cell dying.

* + Cell are at highest metabolic activity.
	+ Cell are most susceptible to adverse environmental factors stage.

1 Radiation.

2 antibiotics.

 **Stationary phase**

* + Population size begins to stabilize.

 No of cells produced = No of cell dying

* + Overall cell number does not increase.
	+ Cell division begins to slow down.

 **Death phase**

* + Population size begins to decrease.

No of cell dying> No of cell produced

* + Cell number decrease at a logarithmic rate.
	+ Cells lose their ability to divided.
	+ A few cell may remain a live for a long period of time.

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 **(The End)**