Assignment-1

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Answer to the Question No.-01(a)

In the organelle chloroplast, the process occurs is called Photosynthesis.

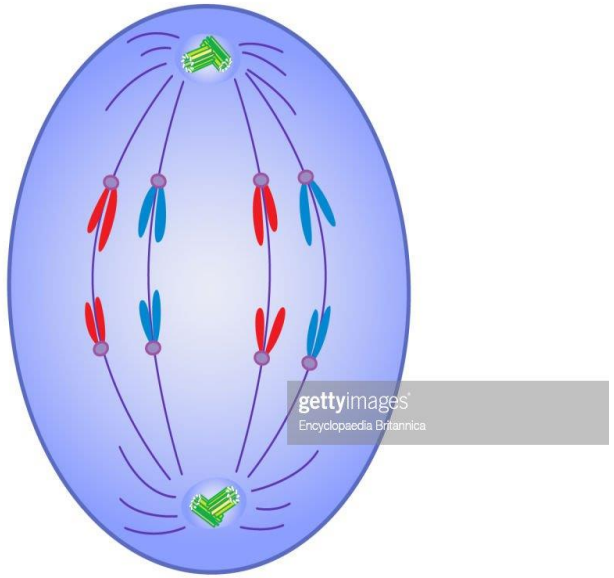
And in the organelle mitochondrion, the process occurs is called Cellular respiration.

Answer to the Question No.-1(b)

Subject to compare	Photosynthesis	Cellular Respiration
Interpretation	It is the method by which a few bacteria, along with some green plants, utilize water and sunshine to transform them into energy.	It refers to the mechanism by which all living things convert energy and provide to the various body cells.
The place where it takes place	In plants with chlorophyll and in some bacteria.	In all living things.
Undergoes	Anabolic process is carried out in photosynthesis.	Undergoes Catabolic process.
Activities	Prepares food and generates energy.	Absorbs oxygen and emits carbon dioxide.
Necessity	This process powers the majority of the planet's living systems.	Even though cellular respiration can result in the production of other substances like lactic acid or carbon dioxide, its primary goal is to produce energy.
Requirement of sunlight	Because photosynthesis occurs only in the presence of sunlight, this process necessitates the presence of sunlight.	This process does not require sunlight always.

Anwer to the Question No-02

The 1st figure attached in the given question indicates the 4th stage of Mitosis cell division which is called 'Anaphase'.

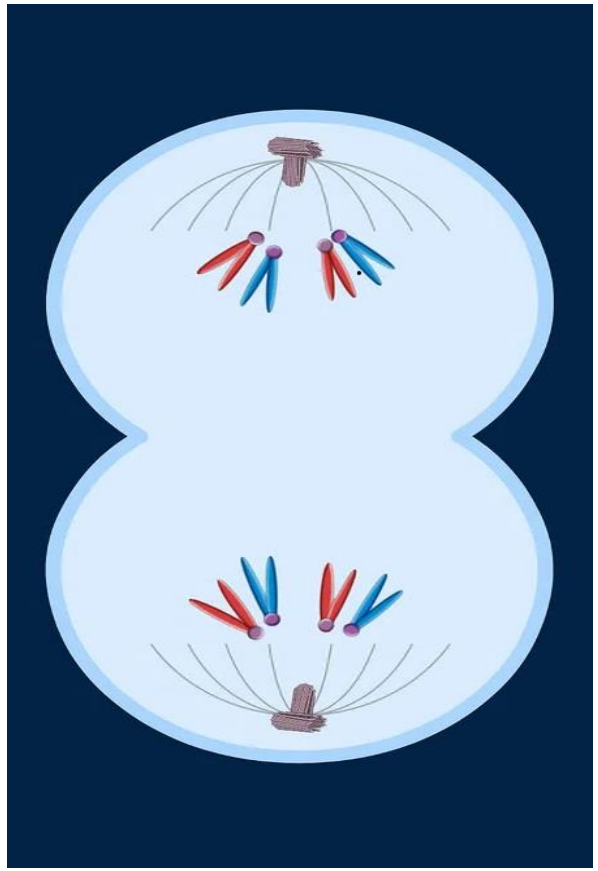


Source: https://www.gettyimages.com/detail/news-photo/mitosis-anaphase-news-photo/641457126?adppopup=true

Characteristics of Anaphase:

i. Anaphase is the quickest stage and most fascinating to observe.
ii. This phase only occurs once during mitosis.
iii. The chromosomes enter this phase after they have condensed to their greatest extent overall.
iv. This section is characterized by the activity of tubulin fibers resulting in their shortening and eventually actuation apart of the sister chromatids to the other poles.
v. Spindle poles move apart.
vi. The appearance of V-shaped structures differentiates this phase.

And the last figure shows the phase named 'Telophase.'



Source: https://www.britannica.com/science/mitosis

Characteristics of Telophase:

i. Telophase is the 5th and final stage of mitosis cell division.

ii. The cell is essentially finished dividing during telophase, and it begins to re-establish its regular structures through cytokinesis (division of the cell contents).

iii. The pieces of a mitotic spindle are revealed.

iv. One for each pair of chromosomes, two brand-new nuclei originate.

v. Golgi complex and Endoplasmic reticulum(ER) originate again.

vi. The chromosomes tend to loosen up and become on a more "fibrous" appearance.

Answer to the Question No-03

The given pictures basically indicates the activation of Enzymes. A selected portion of the different indicators that have an impact on an enzyme's capacity to operate include salt, pH, cofactors, and coenzymes.

i. The 1st picture is about acid and base. That means it requires a certain limit of acidic of basic condition to maintain the proper activity of enzymes

ii. The 2nd figure is of PH scale. Actually, enzymes are proteins. Most enzymes will lose their activity if the pH is too high or too low. The ideal pH value is the pH value at which the enzyme is most active.

iii. And the next one is salt. The salt content is a limiting feature that influences enzyme activity. Depending on the concentration, salts can either activate or deactivate the enzyme. If the salt concentration is too high or too low, it will break the interactions in the enzyme's tertiary structure.

iv. The final figure: cofactors and coenzymes are substances that support the proper operation of an enzyme or protein. Cofactors do not bind the enzyme, but coenzymes frequently bind loosely to an enzyme's active site and help recruit substrates. Coenzymes are organic compounds. Known as "helper molecules". They play vital role in terms of activating enzymes.