



SUBJECT: BIOLOGY
CHAPTER: 6
CHAPTER NAME: LIFE PROCESSES.
PERIOD-4

CHANGING YOUR TOMORROW

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RESPIRATION

Respiration is a catabolic (breaking up) process in which complex organic compound like glucose is completely break down with the help of oxygen into carbon dioxide , water and energy



Glucose

+

Oxygen



Carbon dioxide

+

Water

+



Energy

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- The carbon dioxide , water are produced as waste products and the energy is stored in the form of ATP in the cells.
- The break down of glucose in the cells involves many steps.some of these steps occurs in the cytoplasm and some occurs in the mitochondria



- The process which occurs in the cytoplasm of the cell is called glycolysis (the splitting of sugar)
- In this process one molecule of glucose break down to produce two molecules of pyruvic acid. Each pyruvic acid molecule has three carbon atoms.



- The steps which occurs inside the mitochondria is called Kreb cycle where complete breakdown of pyruvic acid occurs.
- Formation of pyruvic acid is common for both aerobic and anaerobic respiration.

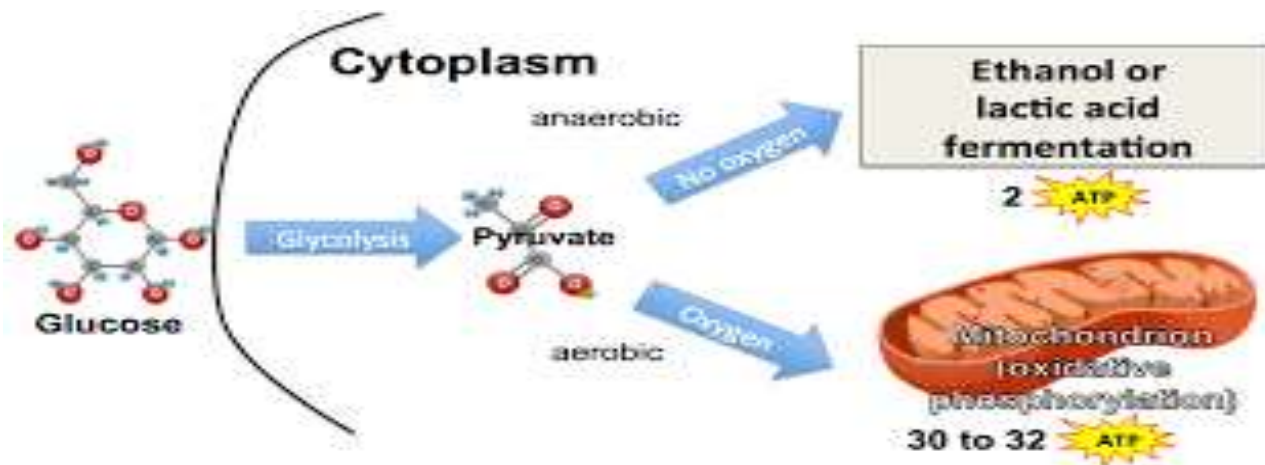
Types of respiration

- Aerobic respiration
- Anaerobic respiration



Aerobic respiration

- **Aerobic Respiration:** This type of respiration happens in the presence of oxygen. Pyruvic acid is converted into carbon dioxide. Energy is released and water molecule is also formed at the end of this process.



Anaerobic respiration

- Anaerobic Respiration: This type of respiration happens in the absence of oxygen. Pyruvic acid is either converted into ethyl alcohol or lactic acid. Ethyl alcohol is usually formed in case of anaerobic respiration in microbes; like yeast or bacteria. Lactic acid is formed in some microbes as well as in the muscle cells.

Break down of glucose by various pathways

- Break down of glucose in mitochondria
- Break down of glucose in yeast
- Break down of glucose in muscles



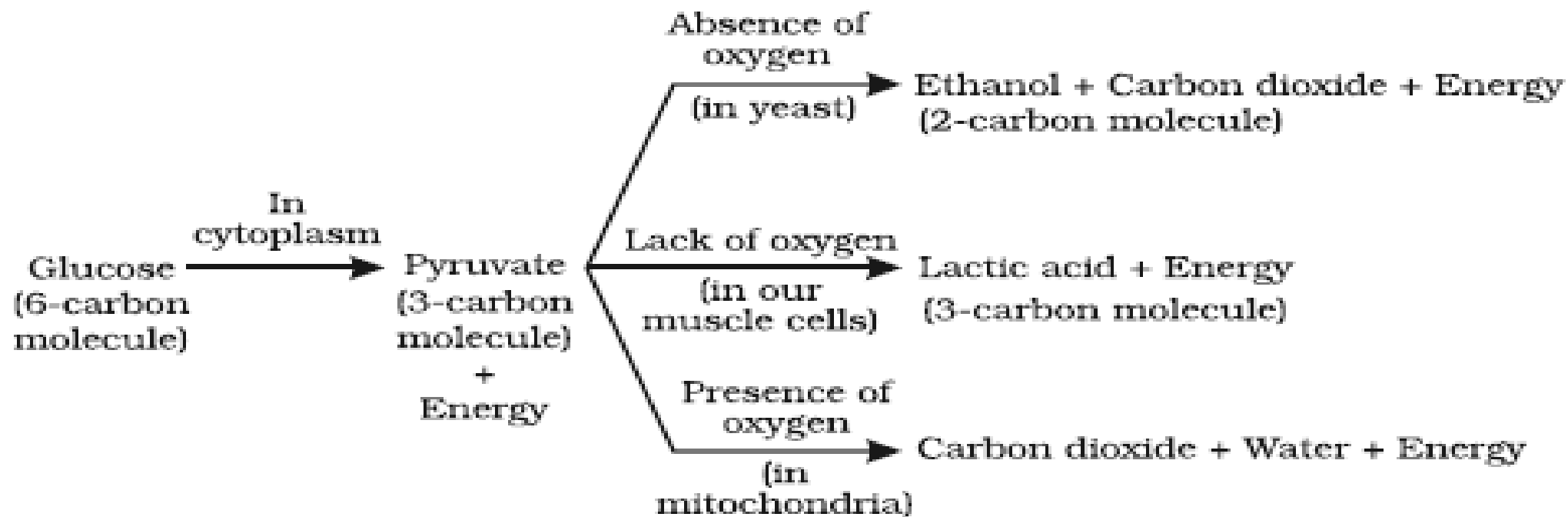


Figure 6.8 Break-down of glucose by various pathways

Respiration in plants

- It takes place in all parts of the plants like root , stem and leaves
- In roots exchange of gases takes place by the process of diffusion
- In woody stem exchange of gases takes place by lenticells
- In leaves exchange of gases takes place through stomata

- <https://www.youtube.com/watch?v=9pSj2bgzTmM>

<https://www.youtube.com/watch?v=kacMYexDgHg>



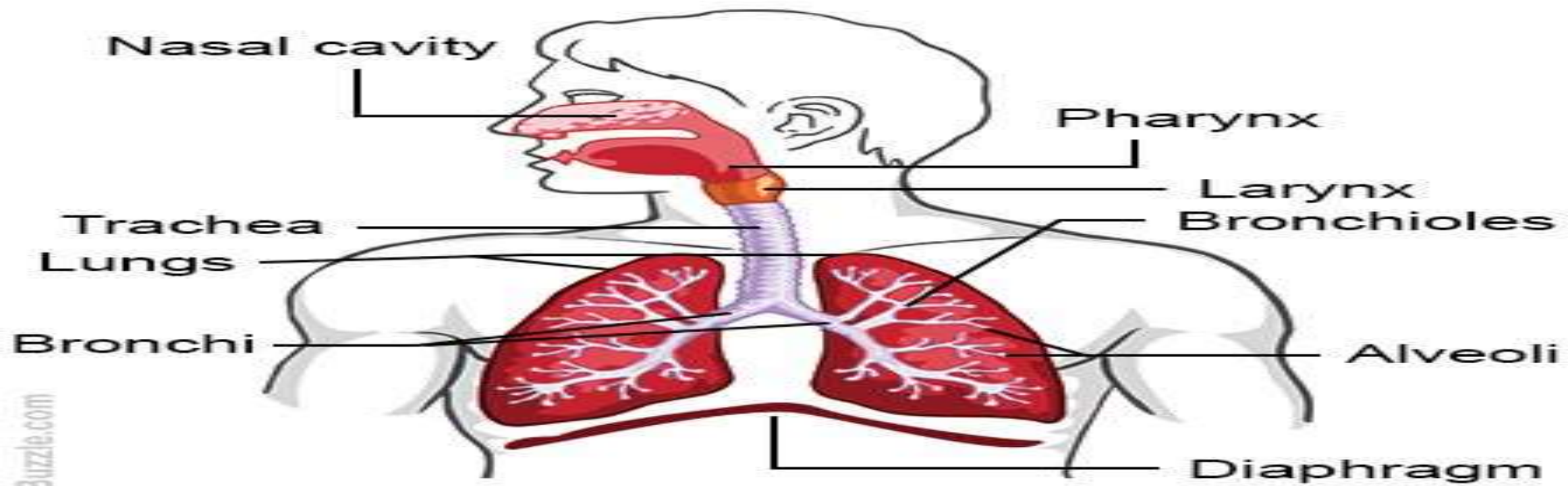
Respiration in animals

- Aquatic animals have gills as respiratory organs
- Land animals have lungs as respiratory organs
- Insects have air tube or trachea as respiratory organs

HUMAN RESPIRATORY SYSTEM:

- The human respiratory system consists of
- Nostrils
- Nasal cavity
- Pharynx
- Trachea
- Bronchi
- Bronchioles
- Alveoli





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- Nostrils-The human respiratory system begins from the nose which has two holes called nostrils
- Nasal cavities-behind the nostrils there is a passage called nasal cavity



- Trachea: This is composed of rings of cartilage. Cartilaginous rings prevent the collapse of trachea in the absence of air.
- Bronchi: A pair of bronchi comes out from the trachea; with one bronchus going to each lung.
- Bronchioles: A bronchus divides into branches and sub-branches; inside the lung.
- Alveoli: These are air-sacs at the end of bronchioles.

- <https://www.youtube.com/watch?v=dkAe4DjHwMM>



HOME ASSIGNMENTS

- In box Question - 2 ,Pg No-105 and Exercise Question No-8

THANKING YOU
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