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For B.Sc part 3rd, paper VI,
Unit = 2(3).

Question :- Write Notes on KREB
cycle ?

Answer :- The krebs cycle, also
called the citric acid cycle,
is the second major step
in oxidative phosphorylation.
After glycolysis breaks glucose
into smaller 3-carbon molecules,
the krebs cycle transfers
the energy from these mole-
cules to electron carriers, which
will be used in the electron
transport chain to produce
ATP.

Krebs cycle :-

The krebs cycle
named after Hans krebs is
a part of cellular respira-
tion. its other names

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one the citric acidity cycle, and the tricarboxylic acid cycle (TCA cycle).

The "Krebs cycle" is a series of chemical reactions used by all aerobic organisms in their energy conversion processes. It is important to many biochemical pathways. This suggests that it was one of the earliest parts of cellular metabolism to evolve.

The Krebs cycle comes after the link reaction and provides the hydrogen and electrons needed for the electron transport chain. It takes place inside mitochondria.

Summary :-

The diagram below shows how this part of respiration is an ever-respirating cycle which produces

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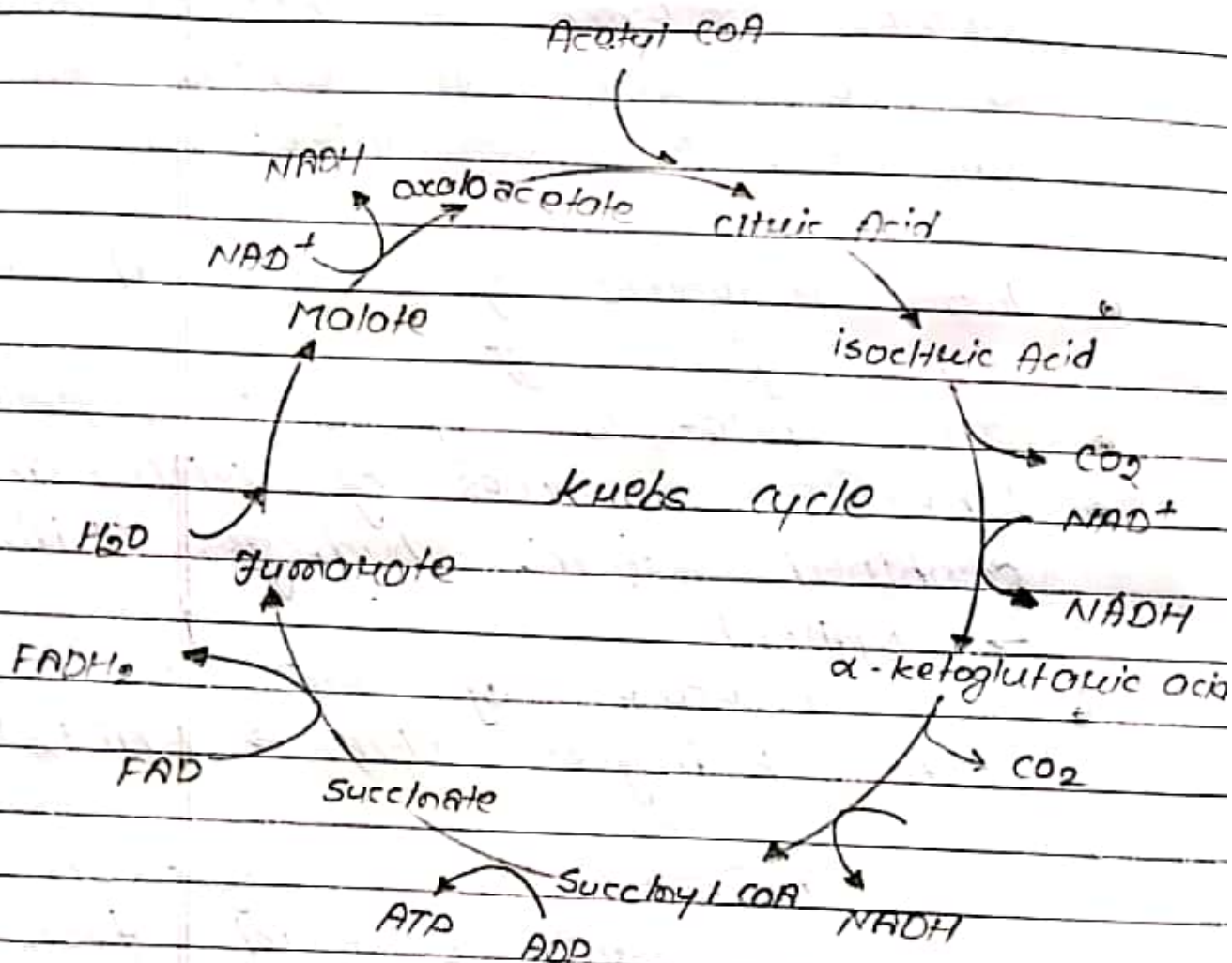
ATP and gives off CO_2 .
The ATP is a molecule which carries energy in chemical form to be used in other cell processes. To summarize:

- Two molecules of carbon dioxide are given off.
- One molecule of GTP is formed
- Three molecules of NAD^+ are combined with hydrogen ($\text{NAD}^+ \rightarrow \text{NADH}$)
- One molecule of FAD combines with hydrogen ($\text{FAD} \rightarrow \text{FADH}_2$)

Because two acetyl-CoA molecules are produced from each glucose molecule, two cycles are required per glucose molecule. Therefore, at the end of two cycles, the products are: two ATP, six NADH, two FADH_2 , two QH_2 (ubiquinol) and four CO_2 .

Before entering the Krebs cycle, the pyruvic acid molecules are altered.

Krebs cycle :-



Each three-carbon pyruvic acid molecule undergoes conversion to a substrate called acetyl-coenzyme A, or acetyl-CoA. During the process, the pyruvic acid molecule is broken down by an enzyme, one

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carbon atom is released in the form of carbon dioxide, and the remaining two carbon atoms are combined with a coenzyme called coenzyme A. This combination forms acetyl-CoA. In the process, electrons and a hydrogen ion are transformed to NAD to form high-energy NADH.

Related pages :-

- Cellular respiration
 - o Glycolysis
 - o Link reaction
 - o Electron transport chain

~~Other :-~~