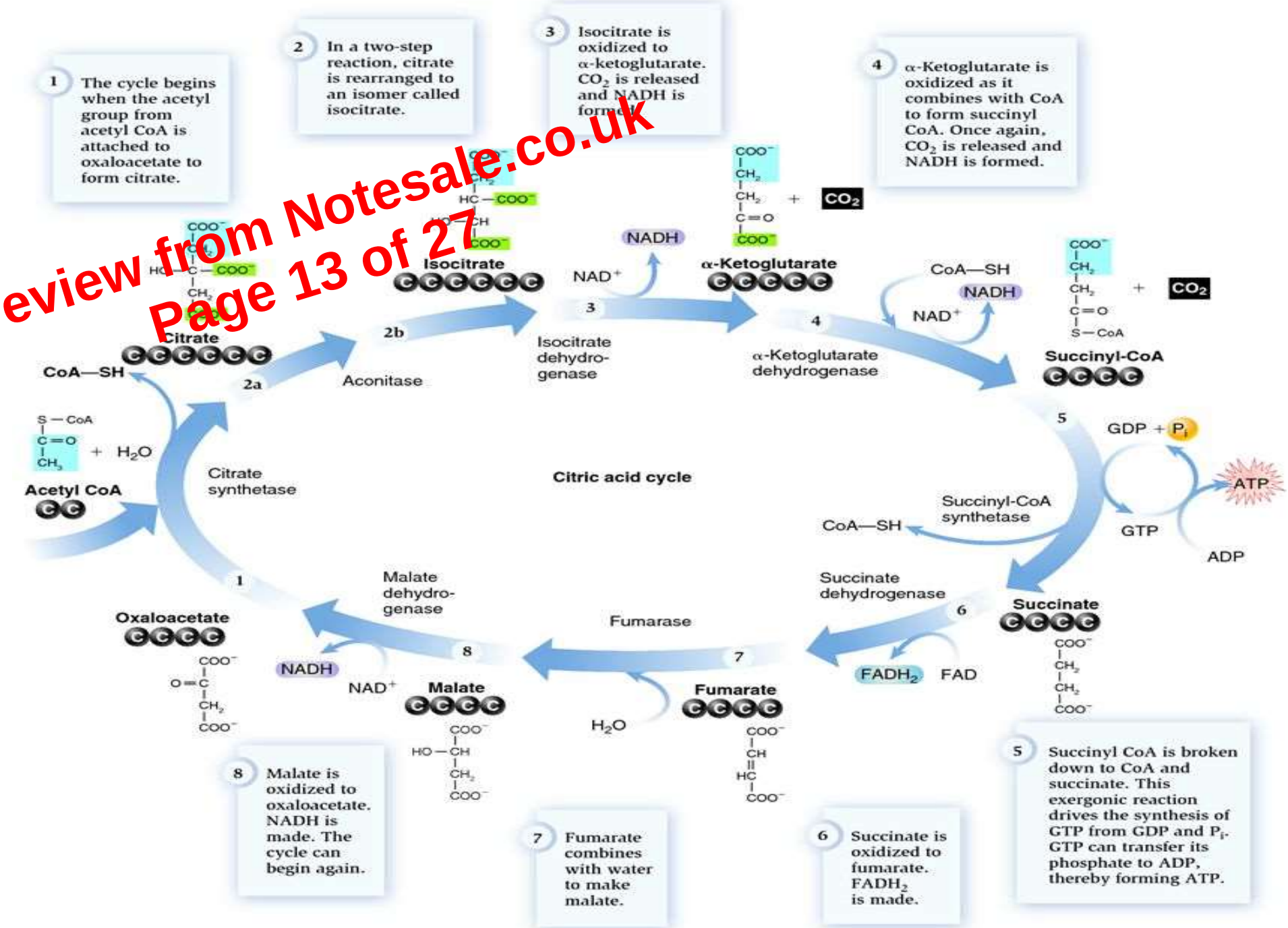

OVERALL REACTION OF KREB'S CYCLE

- OAA is regenerated during this cycle.
- 2. Each pyruvic acid molecule gives three molecules o f CO2, 4 NADH, 2 FADH and one ATP .
- Two Kreb's cycles operate per glucose molecule, as 2 PA are formed per glucose during glycolysis.

SUMMARY- AEROBIC RESPIRATION

Glucose ($C_6H_{12}O_6$) + $6O_2 \rightarrow 6CO_2 + 6H_2O$ +38ATP

1. Glucose is completely oxidized.
2. Takes place in the cells of higher plants and animals
3. Takes place in the cytoplasm and mitochondria of the cell, in three steps.
4. Products are $6CO_2 + 6H_2O$ +38ATP

a) Type of substrate-Respiratory substrate may be carbohydrate, protein or fats.

The kind of substrate being oxidized is obtained by measuring the respiratory quotient. What is respiratory quotient or R.Q?

$$RQ = \frac{\text{volume of carbon dioxide given off}}{\text{volume of oxygen taken in}}$$

For carbohydrates, $CO_2/O_2 = 1$ as in stem and roots.

For protein, $CO_2/O_2 < 1$ as in protein rich seeds like pulses.

For fat and oils $CO_2/O_2 > 1$ as in oil containing seeds e.g. mustard.

As for fats RQ > 1 more energy is released per mol of fat than per mol of glucose.