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~~Dep~~ Depart :- BS Radiology.

SEC :- B

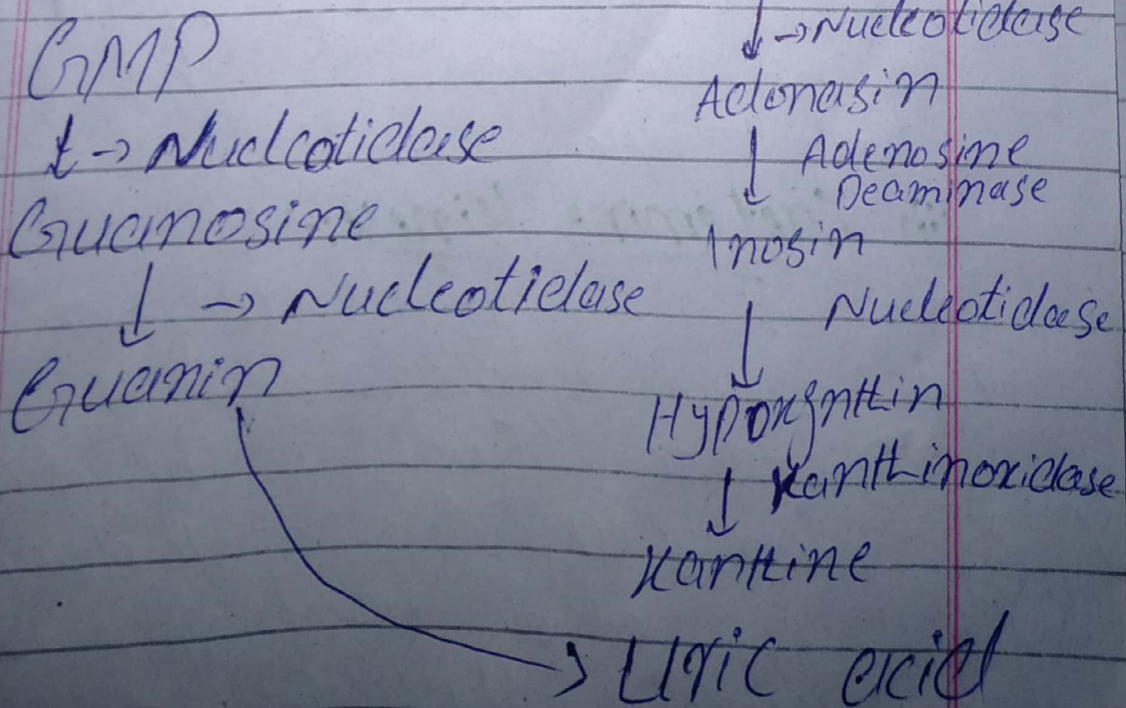
(Q1) Write steps involve in uric acid formation?

Ans (1)

⇒ Uric Acid :-

Uric acid is a waste by product. It is formed when your body breaks down purines which are found and some food. Purines show up when cells die and get taken away.

- Step involve in Uric acid formation :-



Q1 and Q2

Q1 Page (2)

In the formation of uric acid the GMP is break down into Guanine and AMP break in to Xanthine. The uric acid is formed by combination of Guanine and Xanthine.

(Q2)

(Q2 page 1)

write down clinical significance of ^{enzymes} functional

(i) Alkaline Phosphate. (ii) More?

Ans => 2:

=> Alkaline Phosphate =>

It is used to show liver function its indication of bone formation.

(iii) Creatinine Kinase =>

Its use for to show myocardial infarction such as heart attack

(ii) Sever muscular break down

(iii) It is also used for muscular dystrophy.

(Q2 Page 2)

(iii) Gamma glutamyl transfers:

it is used for
liver function test.

X = X = X = X =

(Q3) Page (1)

(Q3)

How many proteins are involve in electron transport chain and how do electron move in electron transport chain?

(Ans 3)

Proteins involve in the electron transport chain are in the form of complexes.

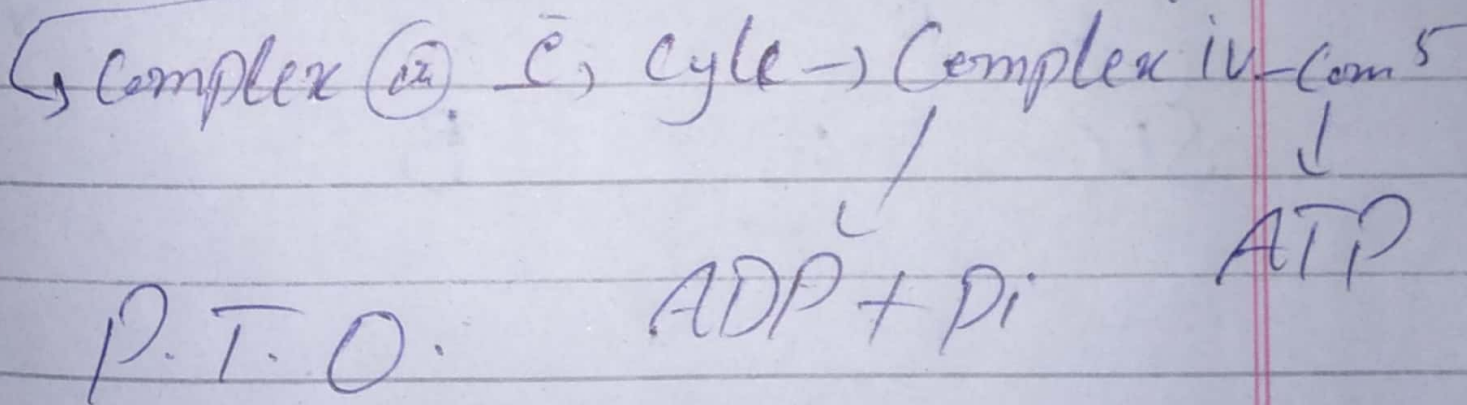
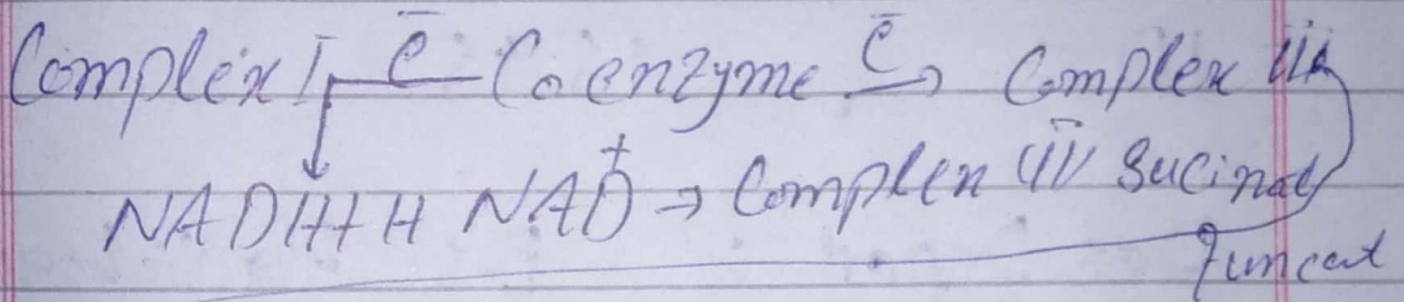
There are Four complexes

Complex I - NADH dehydrogenase.
Complex II - Succinate dehydrogenase.
Complex III - Ubiquinone - Cytochrome c reductase.

Complex IV - Cytochrome oxidase.

Q3 Page 2

Electron move in E.T.C.



Q4

Page ①

(Q4) Write down the four steps involved in beta oxidation.

Ans No: 4:

① Dehydrogenation:

In the first step, acyl-CoA is oxidized by the enzyme acyl-CoA dehydrogenase. A double bond is formed between the second and third carbons (C₂ and C₃) of the acyl-CoA chain entering the beta oxidation cycle. The end product of this reaction is trans-Δ²-enoyl-CoA (Trans-Δ²-enoyl CoA). This step uses FAD and produces FADH₂, which will enter the citric acid and form ATP to be used energy.

That ~~can~~ the carbon count starts on the right side.

The rightmost carbon below the oxygen atom is C₁. Then

C₂ on the left forming a double bond with C₃ and so on).

② Hydration:

In the second step, the double bond between C₂ and C₃ of trans- Δ enoyl-CoA is hydrated, forming the end product L- β hydroxyacyl-CoA, which has a hydroxyl group (OH) in C₂ in place of the double bond. This reaction is catalyzed by another enzyme: enoyl-CoA hydratase. This step requires water.

③ Oxidation:

Hydroxyl group in C₂ of L- β -hydroxyacyl-CoA is oxidized by NAD⁺ in a reaction that is catalyzed by 3-hydroxyacyl-CoA dehydrogenase. The end product are β -ketoacyl-CoA and NADH+H. NADH will enter the citric acid

Cycle and produce ATP that will be used as energy.

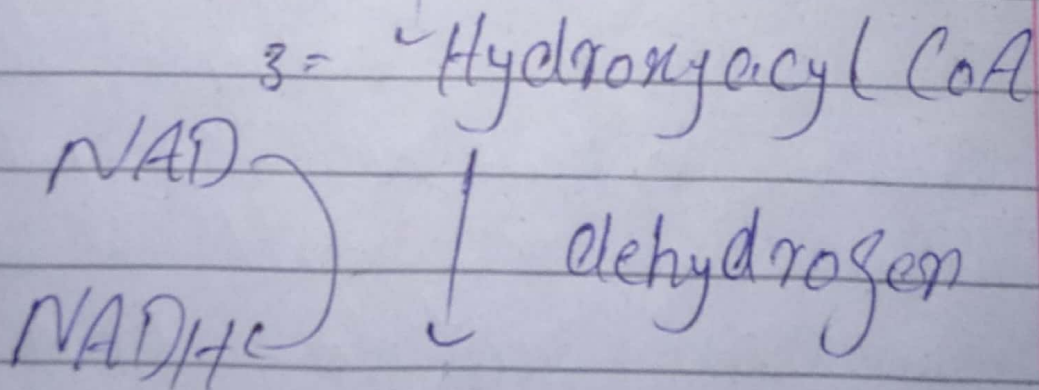
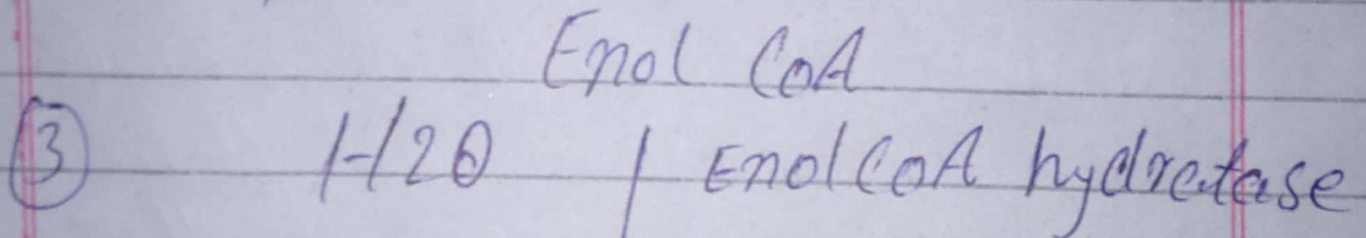
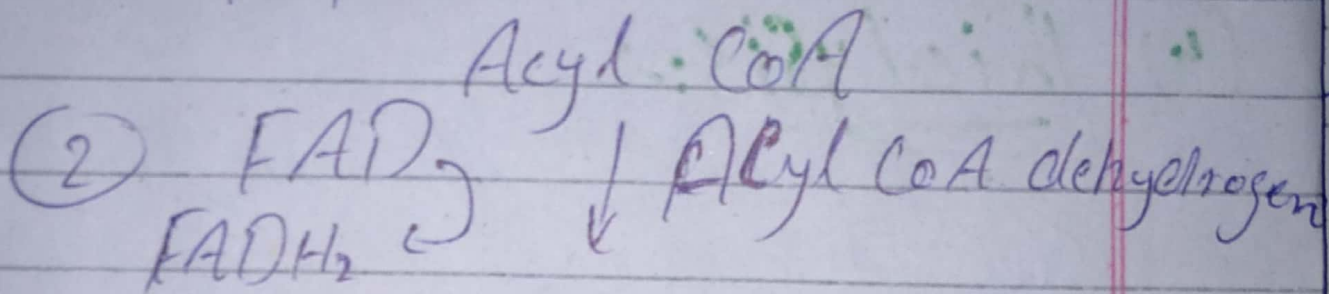
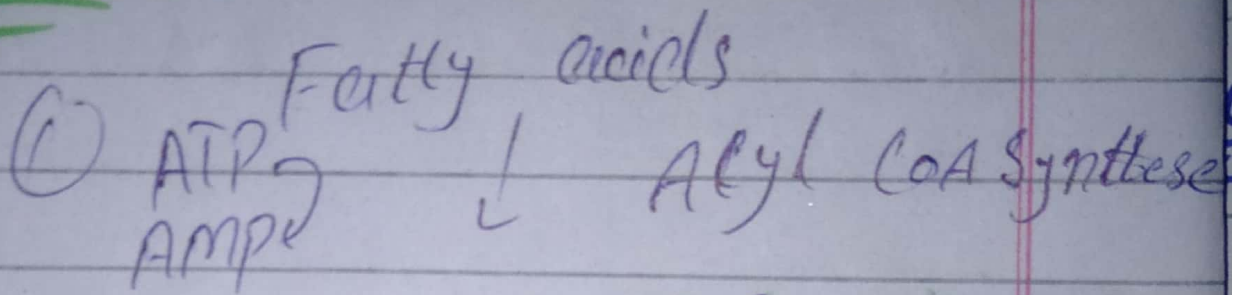
4) Thiolysis:->

Finally, in the fourth step, β -ketoacyl CoA is cleaved by a thiol group (SH) of another CoA molecule (CoA-SH). The enzyme that catalyses ~~the~~ cleavage takes place between C₂ and C₃; therefore, the end products are an acetyl-CoA molecule with the original two first carbons (C₁ and C₂) and an acyl-CoA chain two carbons shorter than the original acyl-CoA chain that entered the beta-oxidation cycle.

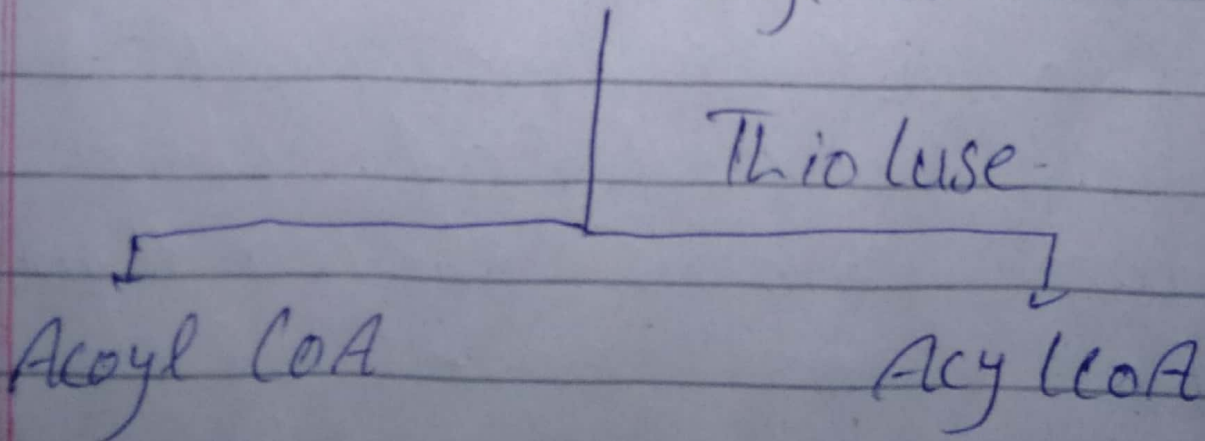
Fatty acids

Q4 ⇒ Page (4)

Hydroxylation



3-Ketoacyl CoA



(Q5) (Page 1)

Q5, How uric acid formation take place in body?

=> Ans (5)

=> Uric Acid Information ->

Uric acid is waste product produced by metabolic waste product of purine base that is GMP, AMP. Xanthine oxidase is the main enzyme involved in uric acid formation and then uric acid is excreted in urine. Excretion production and uric acid in some abnormal condition cause gout, arthritis and kidney stone.

=> Normal Range of uric acid :->

Normal uric acid level

2.4 - 6.0 mg/dl (female)

3.4 - 7.0 mg/dl (male)