

I'd number 16463

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radiology section b

final term exam

**BioBiochemistry
BIOCHEMISTRY**

Marks 50

Write note on the following questions each carries equal marks

Write steps involved in beta oxidation

Answer: beta oxidation

Step 1

Dehydration

Acyl CoA convert into beta

unsaturated acyl CoA with help of enzyme

Enzymes: acyl CoA dehydrogenase

It converts $\text{FAD} \rightarrow \text{FADH}_2$

Step 2: hydration

Hydration: beta unsaturated acyl CoA convert into beta hydroxy acyl CoA with help of enzyme enoyl CoA hydratase. Ketones acyl CoA with help of enzyme beta

Step 3: beta hydroxy acyl CoA convert into beta keto acyl CoA with enzyme beta hydroxy

It converts $\text{NAD}^+ \rightarrow \text{NADH}$. Step 4: thiolysis cleaves beta keto acyl CoA with help of enzyme thiolase and cycle related

2) Write down clinical significance of the following enzymes: acyl CoA dehydrogenase

a) Alkaline phosphatase: clinical significance

1 raises in obstructive jaundice

2 increase in viral hepatitis

3 it increase in xanthomatous biliary cirrhosis it increase in space occupying

Lesions like hepatocellular carcinoma

b) Creatine kinase important it is more sensitive indicator of in early stage of myocardial infarction

2 useful in subendocardial infarction

3 magnitude of elevation is more than LDH

c) gamma-glutamyl transferase important 1 it increase in alcoholic hepatitis

2 some drug like phenytoin and warfarin also increase along with help ALP indicate that ALP is hepatic origin

3) How many proteins are involved in electron transport chain and how do electrons move in the electron transport chain?

Ans protein involved in electron transport chain

There are 4 complex of protein

1 complex 1 NADH dehydrogenase

2 complex 2 succinate dehydrogenase

3 complex 3 coenzyme Q reductase

4 complex 4 cytochrome c oxidase

Electron movement

1 glucose and fatty acid donate electron to NAD and FAD reduce NADH and FADH₂

2 coenzyme Q accept electron from NADH and FADH₂ with help of enzyme acyl-CoA dehydrogenase and succinate dehydrogenase

3 coenzyme Q donate electron to cytochrome b_{c1} c_c 'a₃

4 Write down the four steps involved in uric acid formation

Ans uric acid formation

From adenosine

Step 1 adenosine convert into inosine with help of enzyme adenosine deaminase this reaction use water produce ammonia

Step 2 inosine convert into hypoxanthine with help of enzyme nucleoside phosphorylase this reaction use H_2O to produce ribose phosphate

Step 3 hypoxanthine convert into xanthine and then uric acid with help of enzyme xanthine oxidase

This reaction use oxygen

Step 1 guanosine convert into guanine with help of enzyme nucleoside phosphorylase this reaction use H_2O to produce ribose phosphate

step 2 guanine convert into xanthine with help enzyme guanine this reaction use water to produce ammonia

Step 3 xanthine convert into uric acid with help of enzyme xanthine oxidase

5) How uric acid formation takes place in body?

Ans uric acid

1 normal range

Serum contain 3 to 7 mg uric acid

2 formation adenosine and guanosine converted into adenine and guanine with

Help of phosphorylase enzyme

Then adenine and guanine convert into hypoxanthine with adenase and guanine enzyme with help of oxidase hypoxanthine convert into xanthine and then uric acid