part of.

6. DEAMINATION. essay 8 marks

The removal of amino group from amino acids as NH_3.

- oxidative deamination.
- Non-oxidative deamination.

oxidative deamination.

An amino acid is converted into the corresponding keto acid by the removal of the amino functional group as ammonia.

and.

The amino functional group is replaced by the ketone group.

The ammonia eventually goes into Ureacycle

- Oxidative deamination occurs primarily on glutamic acid

Because,

glutamic acid is the end product of many transamination reactions.

- Only liver mitchondria contains glutamate dehydrogenase (GDH). (imark)
- all aminoacids are first transaminated to glutamate and then deaminated.
- Amino acids are deaminated at the rate of 50 - 70 g/day.

Minor pathway of deamination.

(a) L-amino acid oxidase. (FMN is the co-enzyme)

- It acts on all aminoacids except hydroxy and dicarboxylic aminoacids.

(b) D-amino acid oxidase. (FAD is the coenzyme)

- It can oxidase glycine & any D-aminoacids that forms from bacterial metabolism.
- Action of MAO (mono amino oxidase)

Non-oxidative Deamination.

(A) Dehydratases - acts on hydroxy aminoacids.

(a) Ser forms pyruvate.

(b) Thr forms ~~α-aminobutyrate~~ α-Ketobutyrate

B) Desulphydrases. - cysteine undergoes deamination and simultaneous trans-sulphuration to form pyruvate.

- Histidine converted to urocanic acid by histidase.

- Ammonia is formed in GIT by bacterial putrefaction.

Transdeamination.

- Free amino gp of most of the aa is released by a coupled reaction, trans deamination
- transamination followed by oxidative deamination.
- Transamination take place in cytoplasm of all cells, ammonia is transported to liver as glutamate.

- Glu is finally oxidatively deaminated in liver mitochondria.

- Any amino acid ⇄ α-Ketoglutarate.

Transamination in all tissues.

Glutamate.