

Important Question

1.

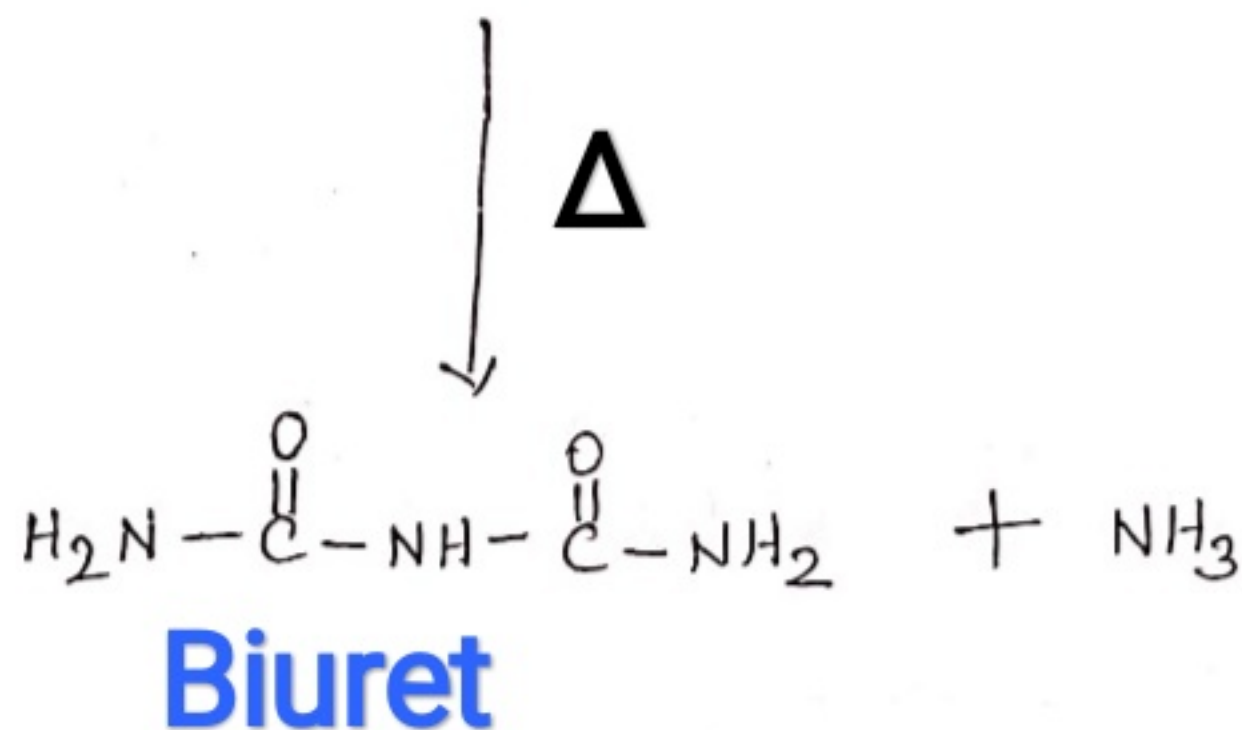
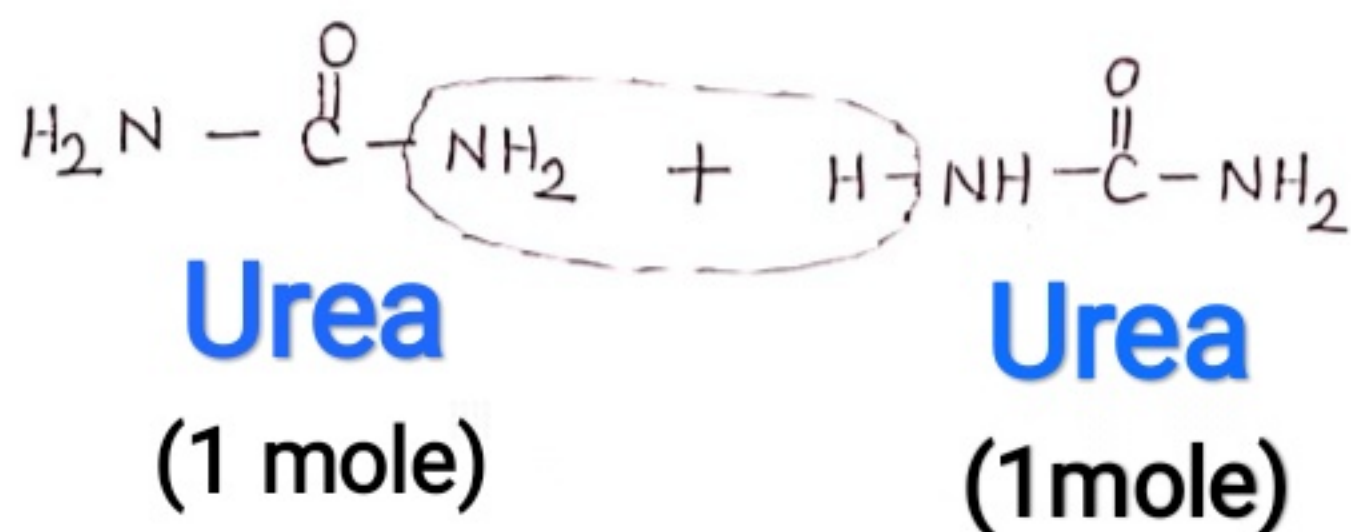
29-07-2020 (From Previous year) By-Dr.Rinky

For Degree-I (Hons.)

"SOME IMPORTANT REACTIONS OF UREA"

1. Action of Heat (Biuret Test)

When urea is heated to a temperature above its melting point (132°C), ammonia is evolved and crystalline biuret is formed.

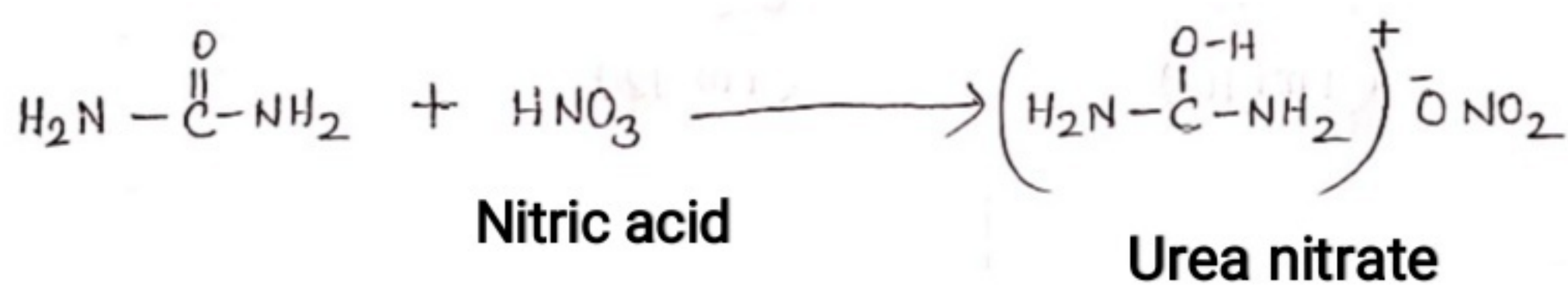
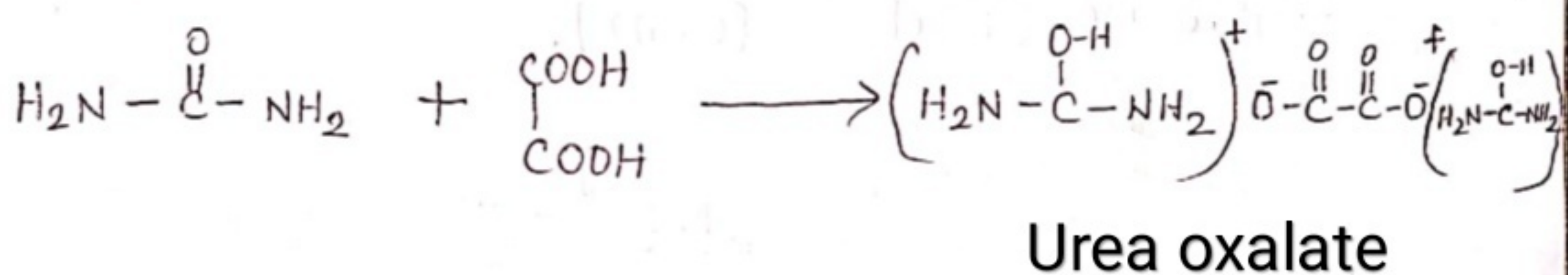


If an alkaline solution of biuret is treated with a drop of copper (II) sulphate solution, a violet

colour appears. This serves as a Test (Biuret Test) for the urea, and also for proteins, peptides and other compounds containing the $-CO-NH-$ linkage.

2. Salt Formation :-

It forms stable, water-insoluble salts with HNO_3 (Nitric acid) and Oxalic acid. With nitric acid it forms urea nitrate and with oxalic acid it forms Urea oxalate.

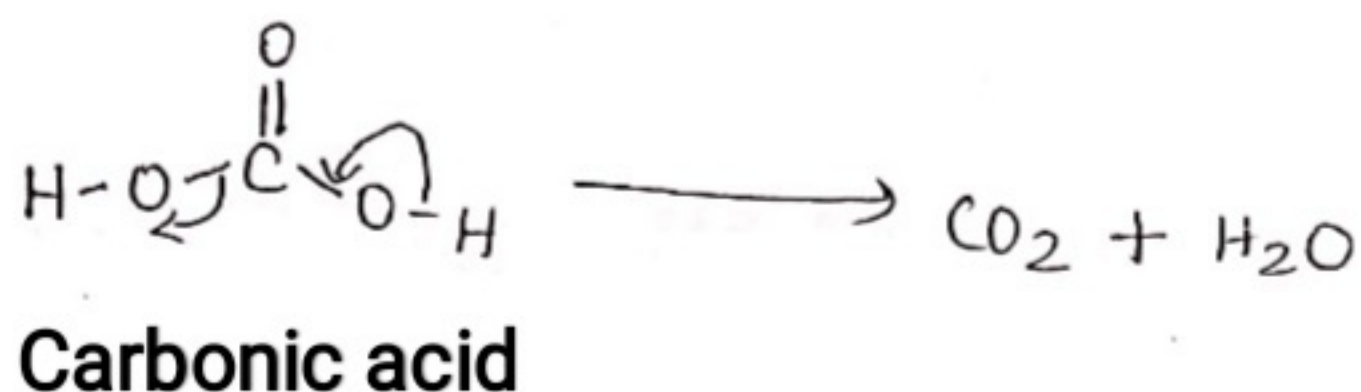
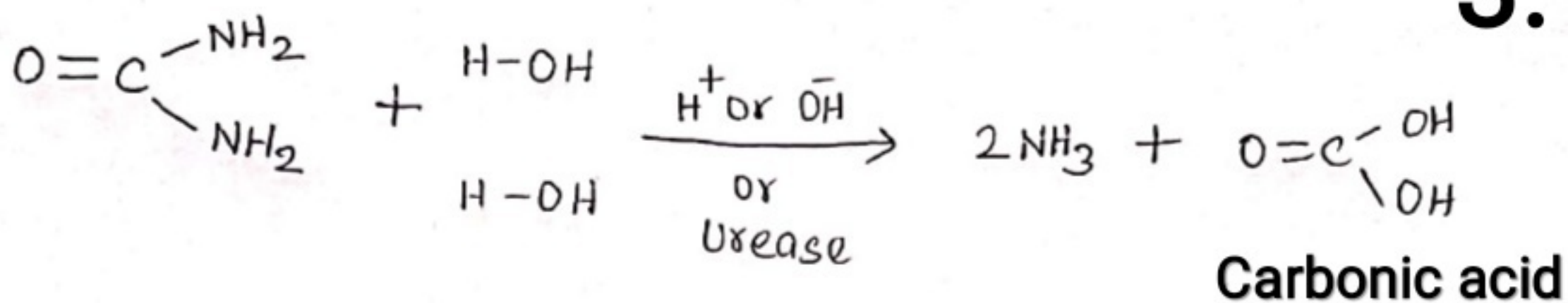


3. Hydrolysis :-

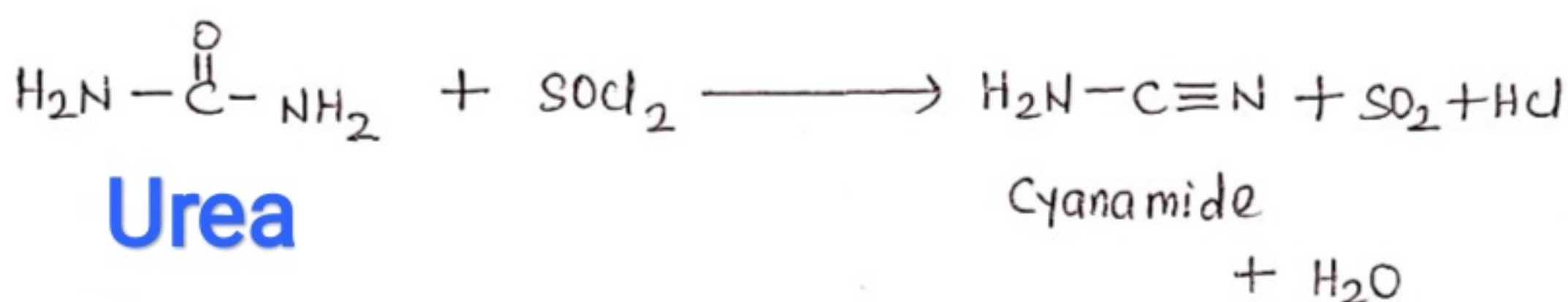
On heating with dilute acids or dilute alkali, urea is hydrolysed to give carbon dioxide and ammonia.

Hydrolysis can also be brought about by the enzyme urease.

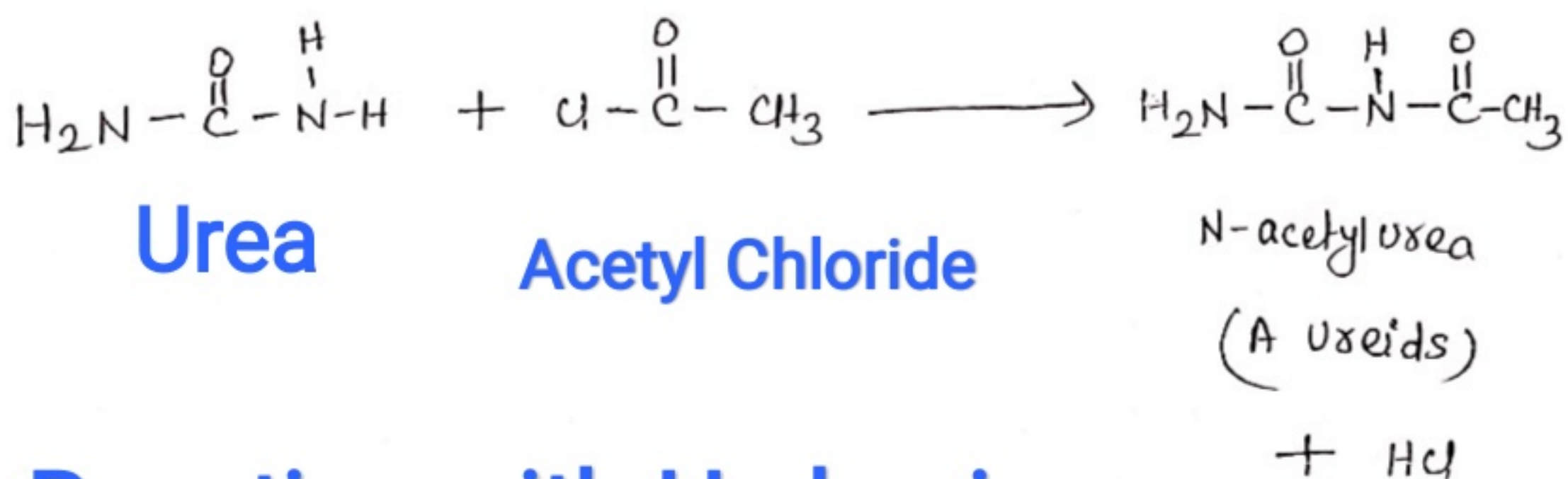
3.



4. Reaction with Thionyl Chloride :-

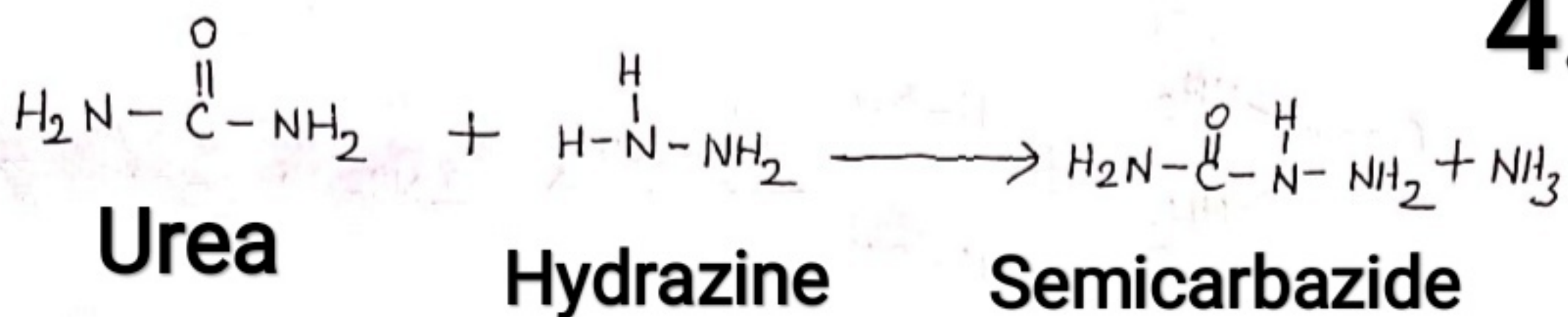


5. Reaction with Acid chloride :-



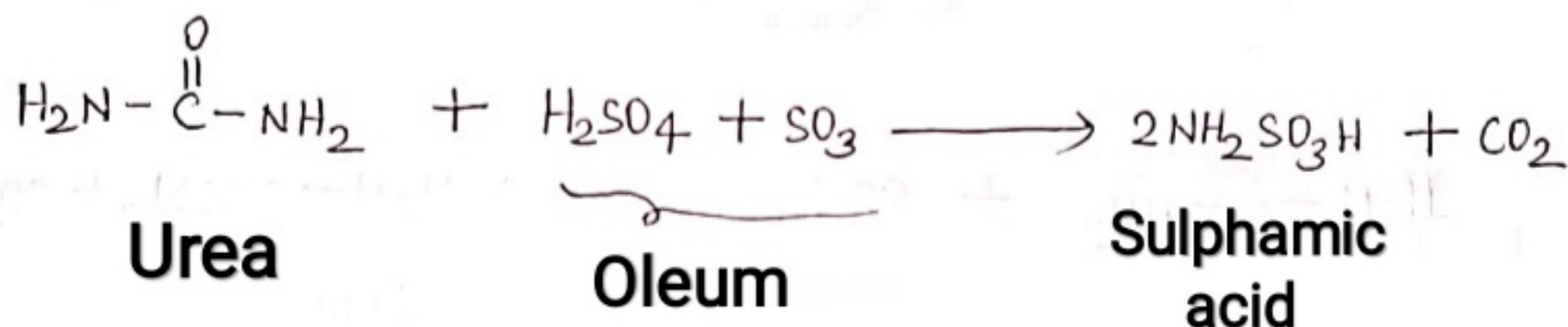
6. Reaction with Hydrazine :-

Urea reacts with hydrazine in the presence of aqueous amyl alcohol as solvent at 100°C to yield semicarbazide.



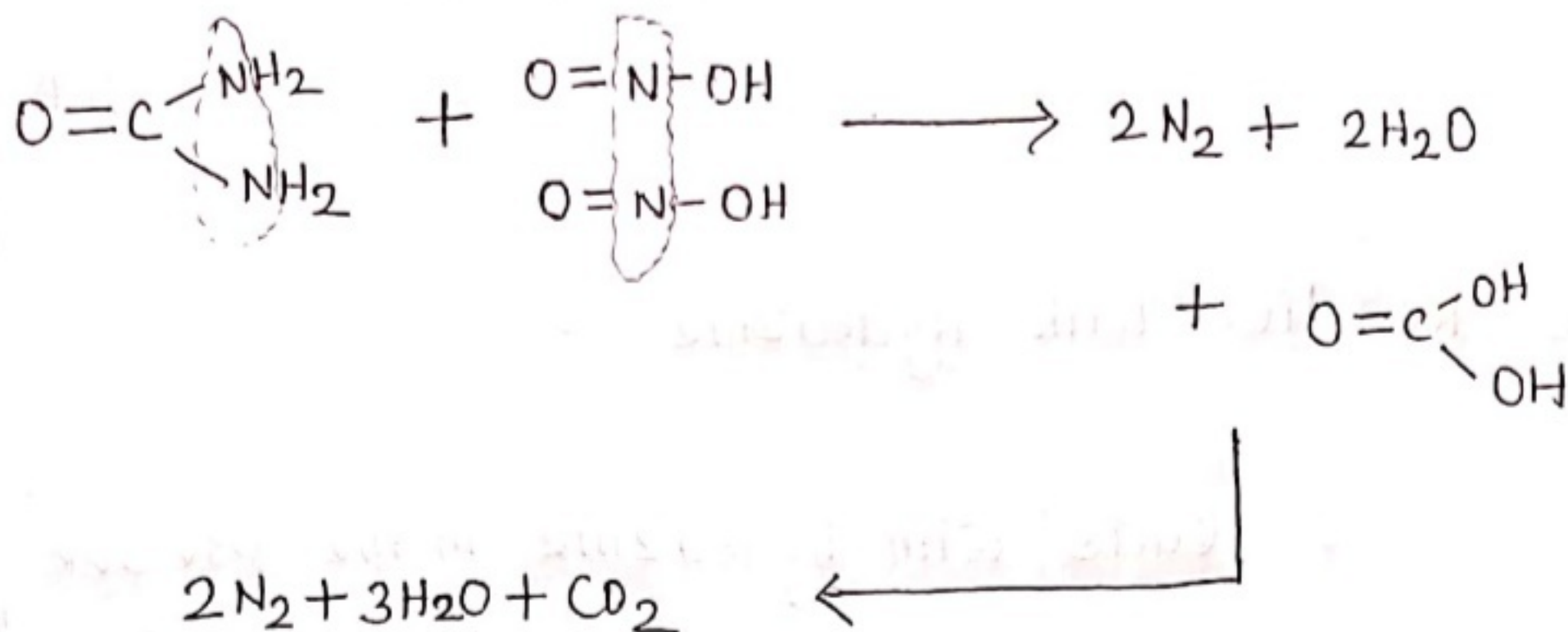
7. Reaction with Fuming sulphuric acid :-

Urea reacts with fuming sulphuric acid to yield sulphamic acid.



8. Reaction with Nitrous acid :-

Urea reacts with nitrous acid to give nitrogen, carbon dioxide and water.



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