Simple Protein: The Protein which yield amino acids or their derivatives on hydrolysis are called simple protein. Simple protein are further classified into 7 sub-types on the basis of decreasing Solubility.

i) **Albumins:** Albumins are Soluble in water and coagulated by heat. They are percipated by Saturated ammonium Salt Solution. They are deficient in glycine. Eg. Plasma albumin, Serum albumin of egg, Ovalbumin of egg, White lactoalbumin of Milk.

ii) **Globulin:** Globulins are insoluble in water but Soluble in dilute Solution of Salts. They are coagulated by heat. They are percipated by lower Concentration of Salts such as ammonium Sulphate or Sodium Sulphate. Ex. plasma globulin, Serum globulin, Ovaglubulin etc.

iii) **Glutelins:** Glutelins are insoluble in water and dilute Solution of neutral Salts. But they are Soluble in acid and bases. They are coagulated by heat. They are rich in arginine, proline and glutaminic acid. Eg. Glutelin in Wheat, Oryzerein in rice.

iv) **Prolamines:** Prolamines are Soluble in 70-80% ethyl alcohol but are insoluble in water, absolute alcohol and other neutral Solvents.

They are not coagulated on heat. They are deficient of lysine Eg. Zein from maize, gliadin from wheat, ordein from barley etc.

v) Scleroproteins: These proteins are insoluble in water, dilute solutions of neutral salts, acids, bases and 60 to 80% ethyl alcohol. but they are soluble in long boiling concentrated acid solutions. Eg. Keratin in hair, feathers, nails and horns and fibroin in Silk.

vi) Histones: Histones are simple protein soluble in water and dilute acids, but insoluble in ammonia. They are not coagulated by heat. Histones are rich in basic amino acids like histidine and arginine but deficient in tryptophan and contain little cystine or methionine. Histones are combine with nucleic acid and haemoglobins.

vii) Protamines: protamines are soluble in water and ammonium hydroxide. They are not coagulated by heat. They are more basic than histones. They contain large quantities of arginine. Tyrosine and tryptophan are absent.

Eg. Salmine from Salmon Sperm
Clupeine from herring.

Conjugated Protein:

Conjugated proteins are proteins united with non-protein substances. The non protein substance can linked to proteins are referred to as prosthetic group.

The prosthetic group is non-protein part.

The protein part is called of apoprotein. The prosthetic group and apoprotein together called holoprotein.

The Conjugated proteins are further devided into 3 subtypes

i) Glycoprotein or Mucoprotein:

Glycoproteins contain carbohydrates as the prosthetic group. On hydrolysis they yield amino sugars. Eg: Mucin in saliva, egg albumen, serum albumin and serum globulin.

ii) Phosphoprotein:

phosphoproteins contain prosthetic group as phosphoric acid. The phosphorus group is attached to the hydroxyl group of protein by an ester linkage. Eg: Casein in milk and vitellin in egg yolk.

iii) Lipoprotein: Lipoproteins contain phospholipid or cholesterol as the prosthetic group.

Eg: Nucleins, nucleoproteins etc.