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Question :- Write notes on function of placenta?

Answer :- Junctions of Placenta :-

Placenta allows the diffusion of monosaccharides, amino acids, hormones, vitamins, oxygen, carbon dioxide, water and other waste materials, because of this it supplies food, oxygen to foetus. It works as an excretory organ of foetus. It releases the nitrogenous waste materials into mother blood.

Meaning of placenta :-

In mammals although the fertilized ovum develops in the body of the mother, the extra embryonic somatopleura contributes to the formation of amnion and chorion while the splanchnopleura forms the yolk sac and allantois.

The allantois grows out of the hindgut of the embryo and expands into the extra-embryonic coelom. It later fuses with the chorion. Although no yolk sac and allantois.

Types of embryonic tissues involved in placentation :-

In mammals, depending upon the types of embryonic tissues involved in placentation, there exists two basic types of placenta, which are related to the two different sources of chorionic vascularization.

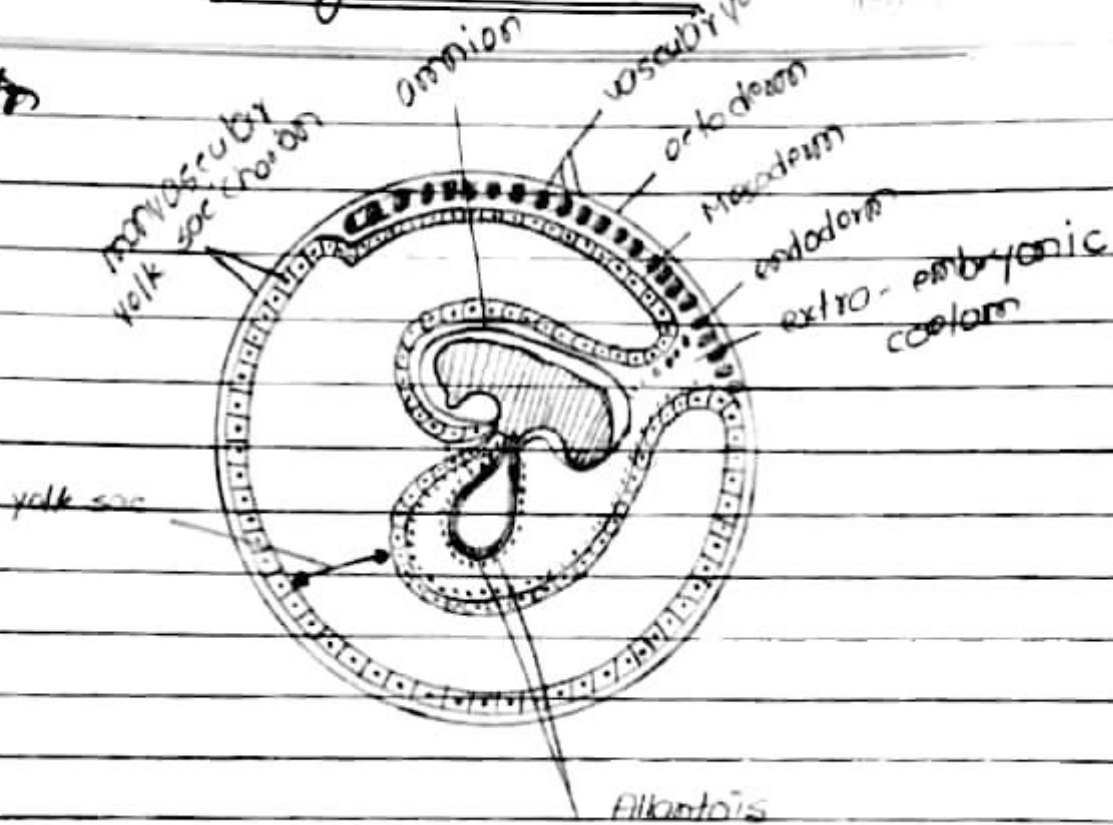
They are as follows :-

(i) Choriovitelline placenta (Yolk-sac placenta)

In some mammals, particularly in most marsupials (Didelphis, Macropus), the allantois remains relatively small and never makes contact with the chorion. The yolk sac on the other hand becomes very large and fuses with the chorion.

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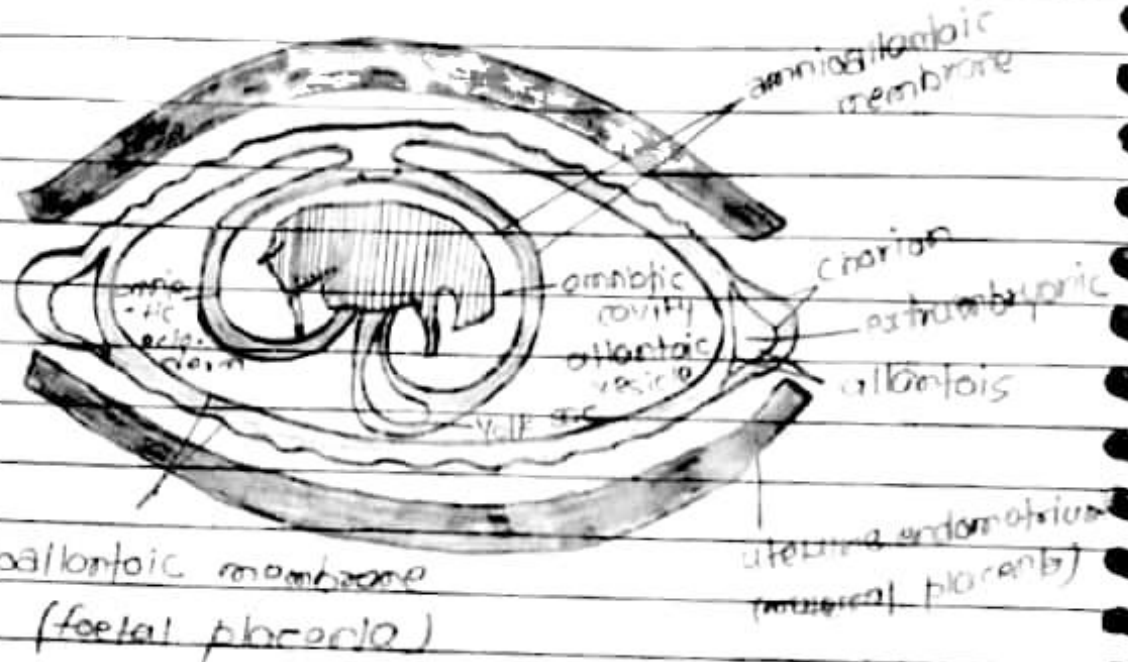
Among eutherian mammals, many carnivores, rodents and insectivores, a similar type of placenta may exist either temporarily the yolk sac provides the initial vascular supply.

In most eutherian mammals and in some marsupials (pouched, *Dasyurus*), the yolk sac remains rudimentary, while the allantois becomes well developed, fuses with the chorion and provides the chorionic circulation. This type of foetal placenta is called chorion-allantoic placenta. Here the chorion possesses finger-like vascular processes

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the villi which grows out into the adjacent maternal tissue.



Junctions of placenta :-

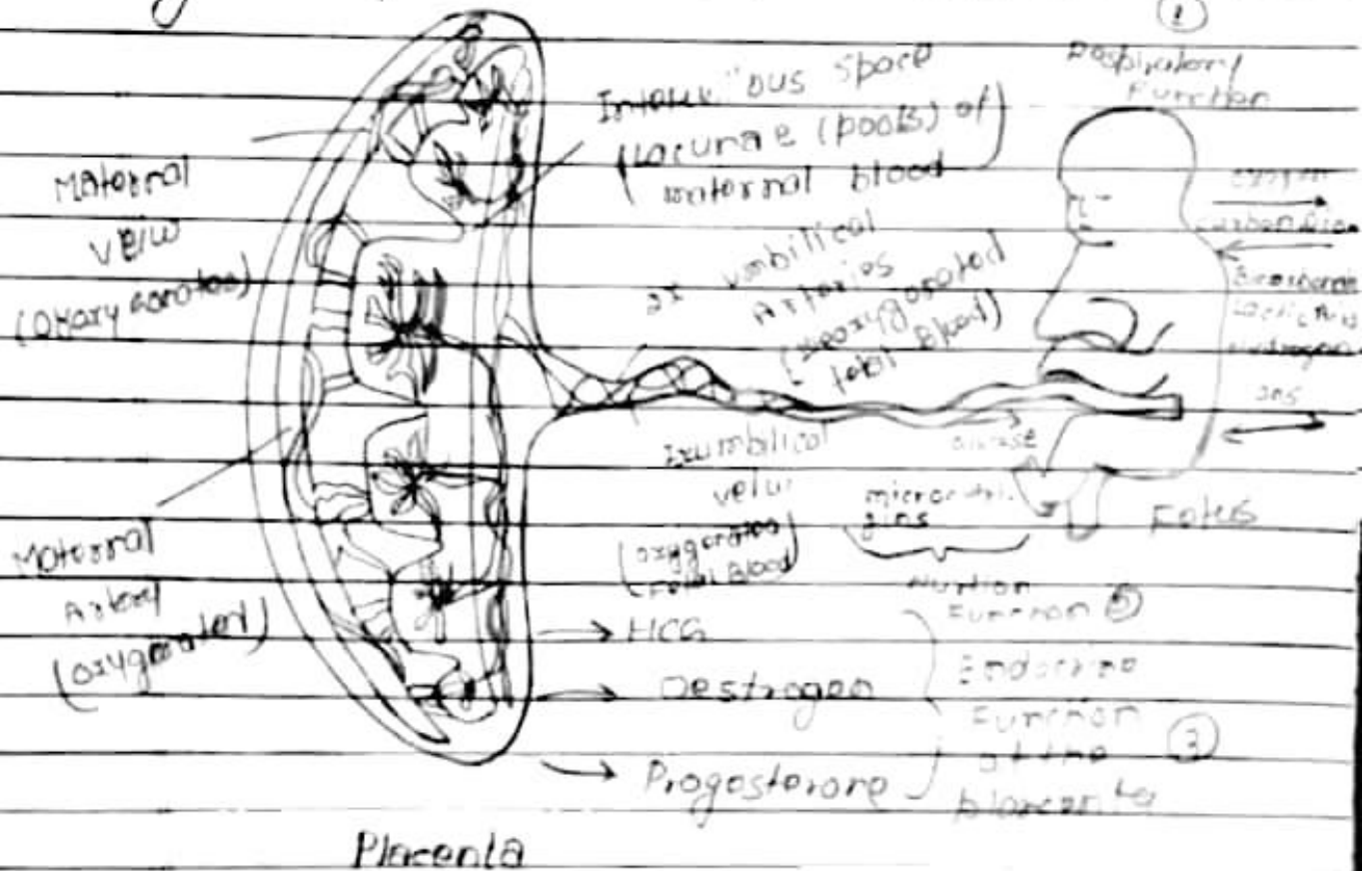
Historically the placenta consists of barriers that prevent the blending of blood of the foetus and mother. From the maternal side the blood enters into the inter-villous space or crypts through about 30 spiral arteries and at high pressure.

The arterial blood rich in oxygen, nutrients etc. passes over the villi in small fountain like streams and

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then under reduced pressure
suckles down at the maternal
base of the placental compartment
- it from where it is removed
by open-ended uterine veins.



The mother's antibodies can transfer across the placenta to the fetus during pregnancy. (to the fetus etc) These antibodies allow the fetus to benefit from the long term immunity of the mother during pregnancy and shortly after birth.