

# **HUMAN REPRODUCTION – THE MIRACLE OF LIFE**

Life Sciences

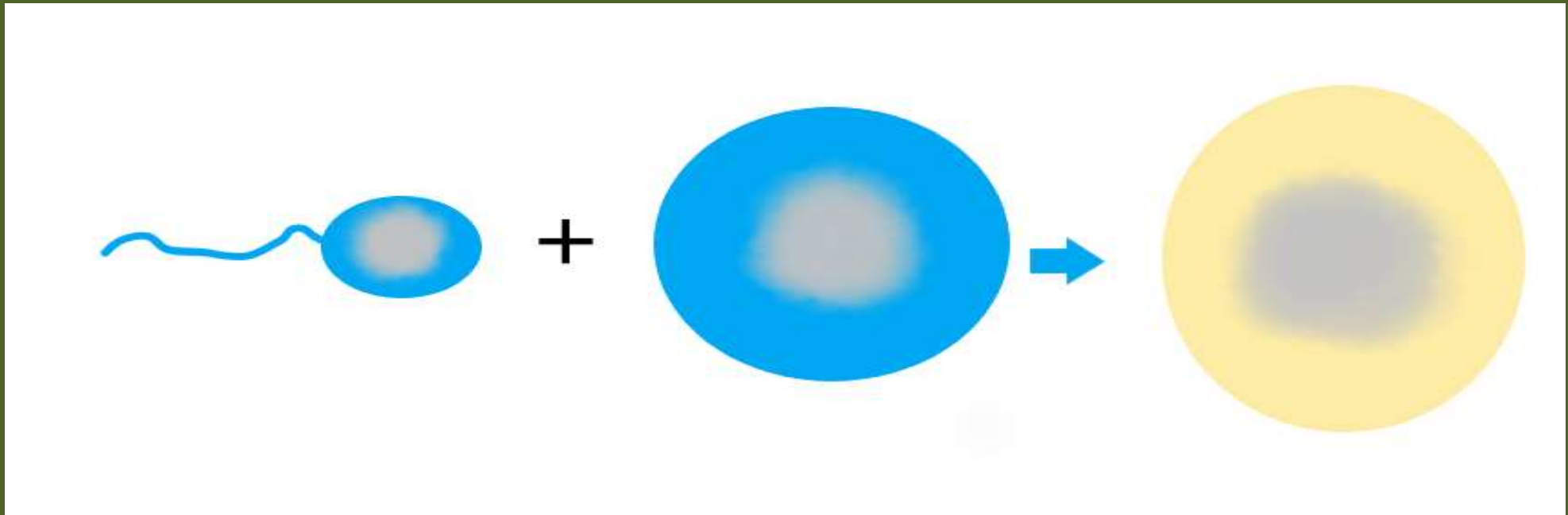
# Life Sciences

## Key Points: Human Reproduction

- Fertilisation
- Development of the Zygote
- Role of Oestrogen and Progesterone
- Diagram of a Developing Foetus
- Functions of Structures of the Developing Foetus

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## Fertilisation



23 Chromosomes + 23 Chromosomes = 46 Chromosomes in Zygote (2n)

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## Fertilisation

When the nuclei of a sperm cell and an ovum combine.  
Each gamete contributes a set of chromosomes ( $n$ ),  
the result is a zygote ( $2n$ ).

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**Morula**

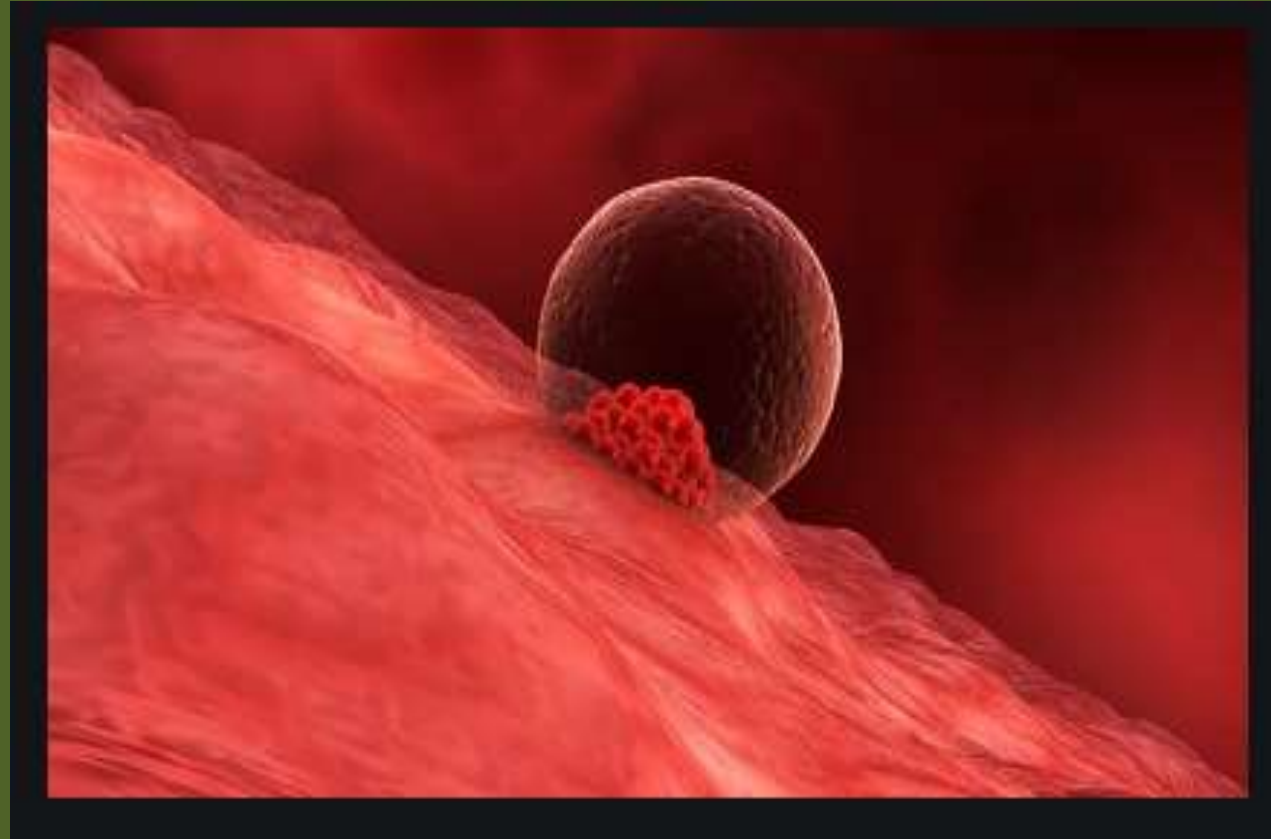
**Blastula and Blastocyst**

**Embryo**

From Vectorstock.com

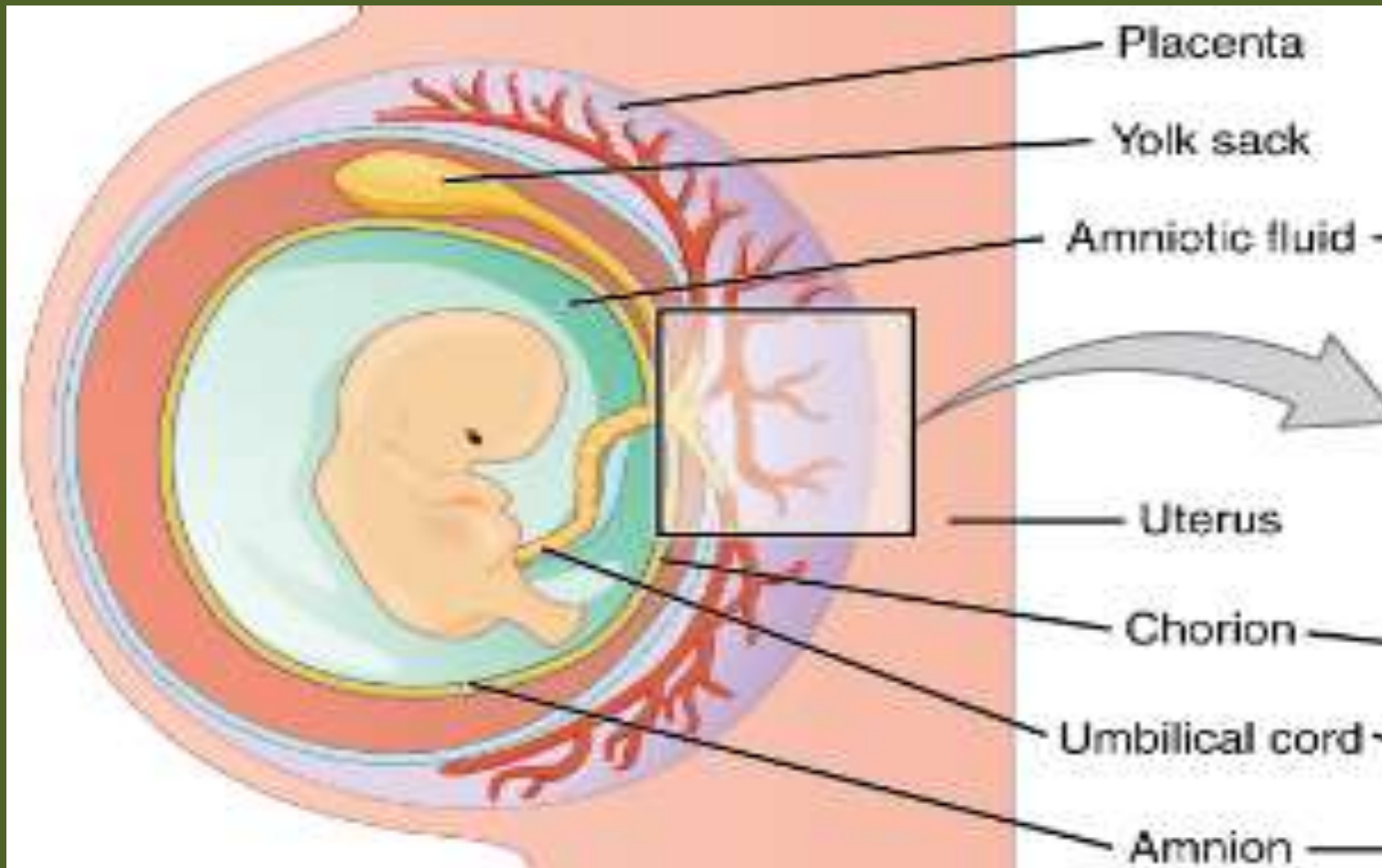
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## Implantation



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## Developing Foetus



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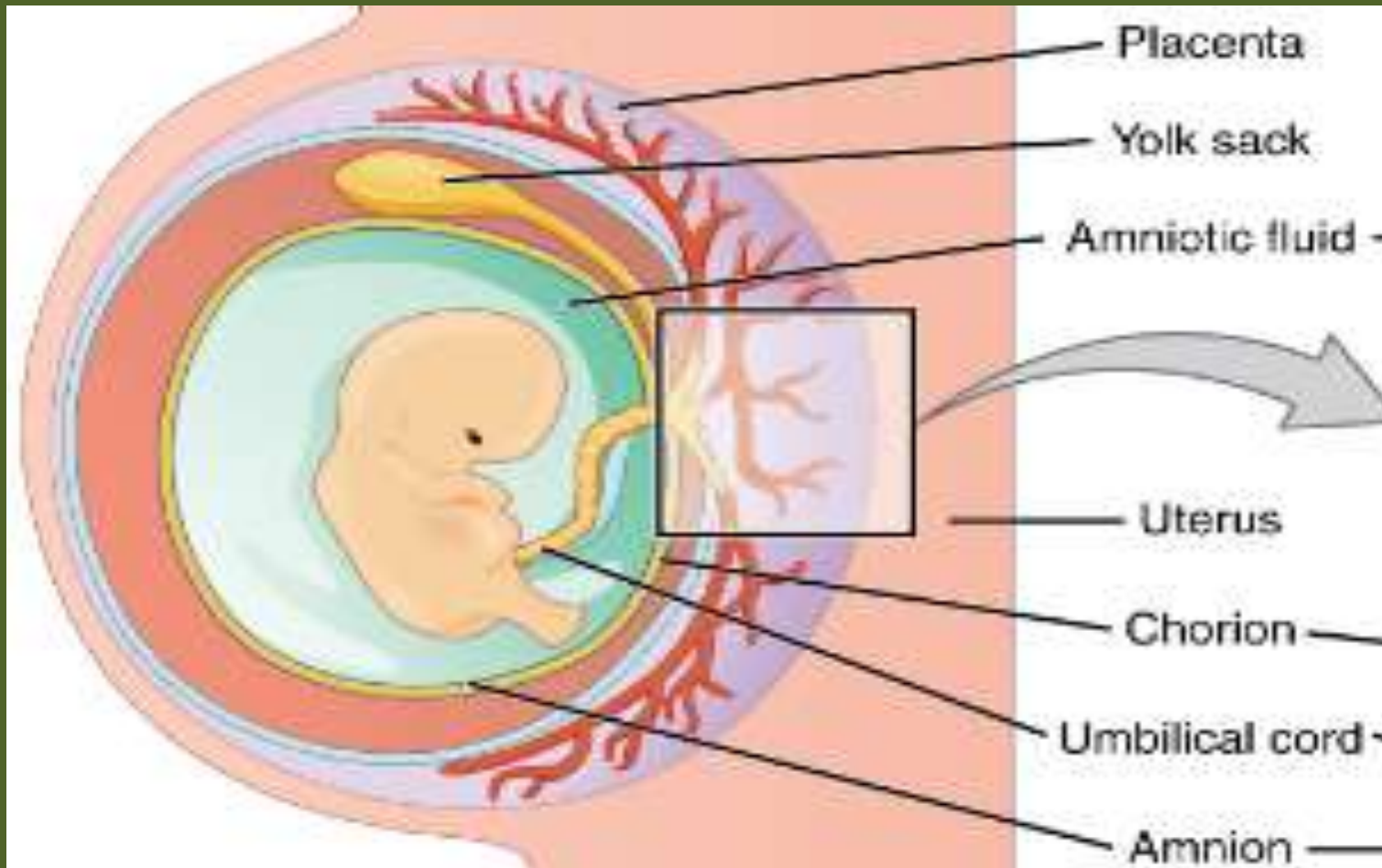
**What are the following?**

- Chorion
- Chorionic villi
- Amnion
- Umbilical cord
- Placenta



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## Developing Foetus



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**What are the functions of the following?**

- Chorion
- Chorionic villi
- Amnion
- Umbilical cord
- Placenta

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## Foetus at 20 Weeks



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## Functions of The Chorion

- Plays a Role in Gases Exchange between Mother and Foetus
- Development of the Placenta
- Eliminates Foetal Waste

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## Foetus at 36 weeks



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## Amniotic Fluid



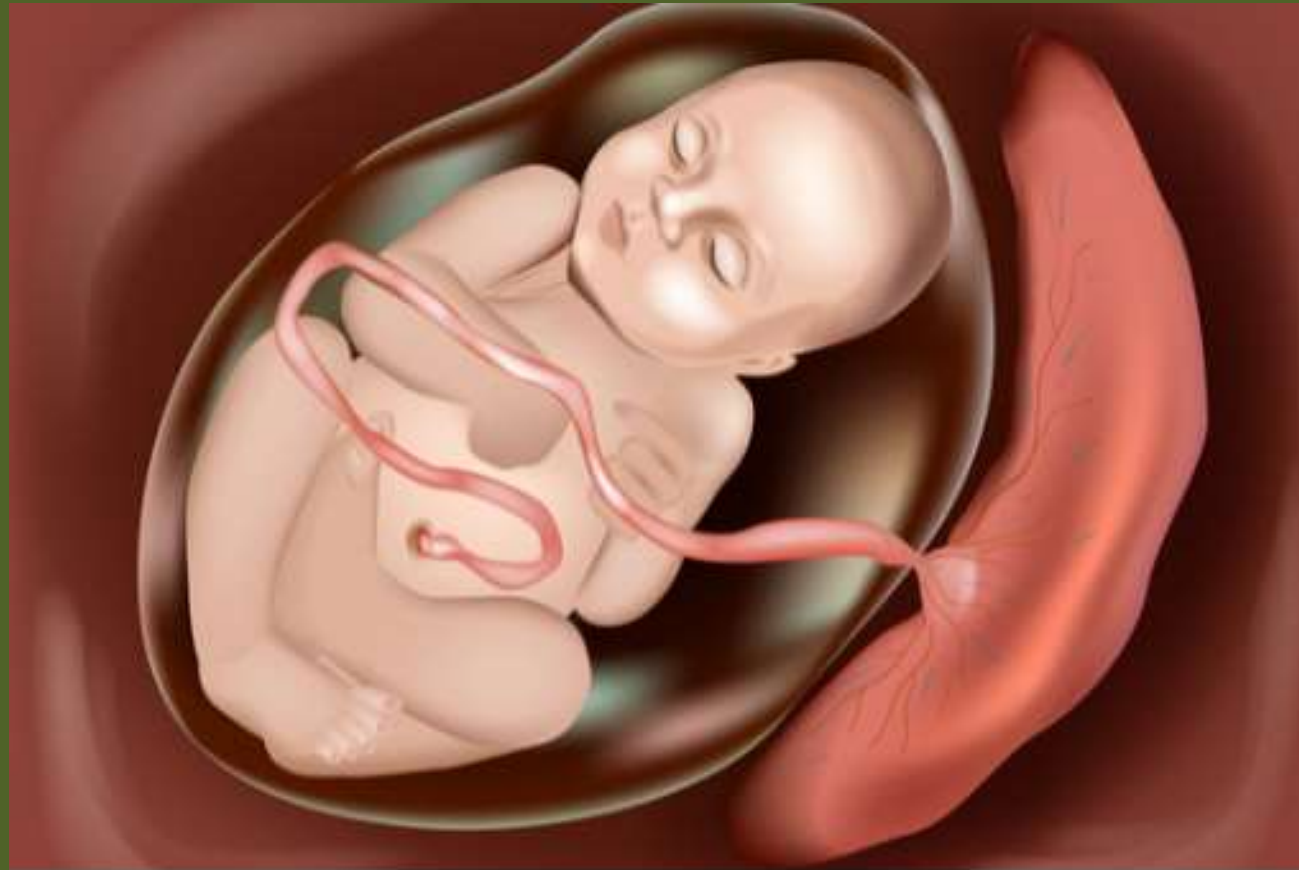
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## Functions of Amniotic Fluid

- Prevents dehydration
- Protects the foetus against physical injury, acting as a shock absorber.
- Prevents extreme temperature changes.

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## The Placenta





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## Functions of the Placenta

- Gases exchange between mother and foetus.
- Nutrients diffuse from mother's blood to foetus.
- Micro-filter to prevent viruses in mother's blood to enter the foetus.
- Allows antibodies from mother to foetus.
- Produces Progesterone.

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## The role of Oestrogen during Pregnancy

- Causes the uterus to grow.
- Triggers the development of the foetus' organs.
- Stimulates the development of the placenta.
- Regulates other female hormones.

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## The role of Progesterone during Pregnancy

- Maintains the endometrium.
- Causes an increase in blood flow to the uterus.
- Prevents further ovulation during pregnancy.

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