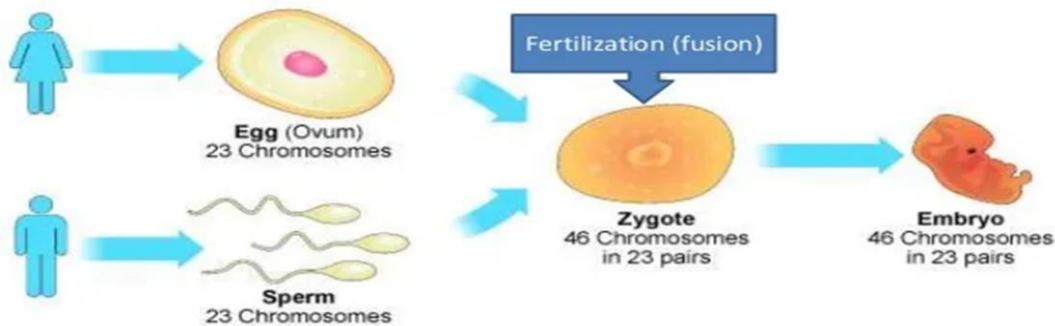


## Sexual Reproduction

**Sexual reproduction** is the process in which new organisms are created, through the combination of the genetic information from two individuals of different sexes. The genetic information is carried on chromosomes within the nucleus of specialized **sex** cells called gametes.

### Sexual Reproduction



### STRUCTURE OF MAMMALIAN GAMETES

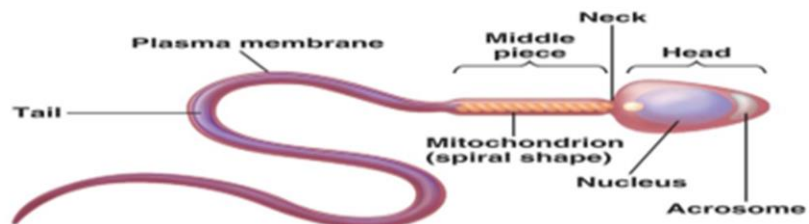
#### GAMETE

A gamete is a mature sexual reproductive cell having a single set of unpaired chromosome. It can be male or female gamete. They are formed in the gonads (testis on ovaries) through a process called gametogenesis.

#### MALE GAMETE (A SPERM)

This is called sperm (or spermatozoa) and produced in the male gonads (testis) by a process called **spermatogenesis**. It is microscopic and unicellular in nature. Usually smaller and more elongated than the egg; about 0.05 mm (0.005 cm) long.

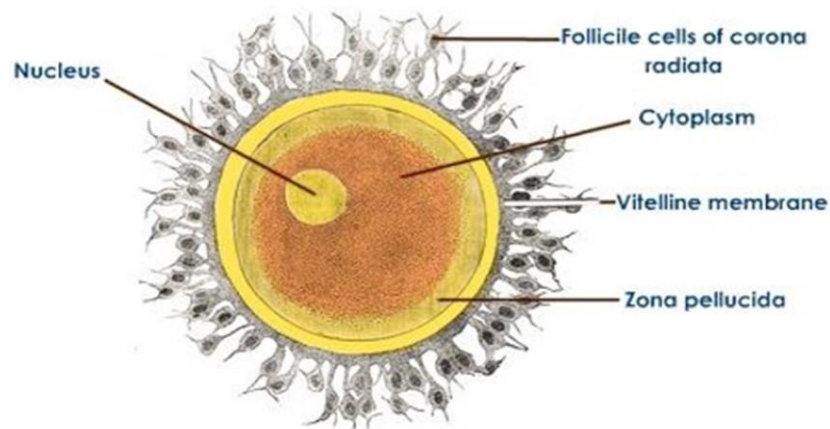
#### *Male Gamete spermatozoa*



**Spermatozoon** consists of the following parts:

1. **Acrosome:** It can be found at the upper part of the head, containing lytic enzymes used to dissolve egg membrane to enhance penetration during fertilization.
2. **Middle piece:** It contains mitochondria for the generation of energy used by the sperm for swimming towards the egg.
3. **Flagellum:** The long whip-like tail for propelling the sperm cell
4. **Nucleus:** It can be found in the head of the sperm cell containing genetic materials (DNA-deoxyribonucleic acid) which fuses with the nucleus of the ovum at fertilization.

#### FEMALE GAMETE



#### THE OVUM

This is called egg (ovum) and is produced in the female gonad (ovary) by a process called oogenesis. This is larger than sperm, about 0.1mm in diameter.

Each ovum is made up of the following

- Cytoplasm:
- A central Nucleus: It contains the chromosomes which carry the genes.
- Granules and yolk droplets: A source of nourishment for the embryo at the early stage of development.
- Plasma membrane: It surrounds the cytoplasm.
- Outer vitelline membrane and jelly coat of glycoprotein.

#### Note

: The nuclei of the sperm and ovum contain chromosomes which carry the genes that are responsible for the transmission of characters from parents to offspring.

#### ASSIGNMENT

1. What is reproduction?
2. Draw a well-labelled diagram of the male reproductive organ in mammals.
3. List five structural parts of the female reproductive organ in mammals and state their functions.
4. State five distinct differences between the male and female reproductive organs in mammals.
5. Differentiate between the male and the female gametes in mammals.