Reproduction in Animals

SUMMARY

Sexual Reproduction in Animals

Amoeba and **bacteria** adopt the **asexual mode of reproduction**. Reproductive organs in humans produce **gametes** - eggs and sperms. A **zygote** is formed by the fusion of an egg and a sperm.
The **male reproductive organs** include a pair of **testes**, two **sperm ducts**, and a **penis**. **Sperms** have a **head**, a **middle piece** and a **tail**. Sperms contain **cell membrane**, **cytoplasm** and **nucleus**.
The **female reproductive organs** consist of a pair of **ovaries**, two **oviducts**, also called **fallopian tubes**, and the **uterus**. The ovary produces **female gametes** called **ova** or **eggs**. During **pollination** in plants, the male gamete fuses with the female gamete. The nuclei of the sperm and the egg fuse to form a zygote, and the process is called **fertilisation**. An organism **inherits** some **characteristics** from the egg and some from the sperm. **Copulation** is the act in which a male reproductive organ enters the female reproductive tract.

When male and female gametes unite outside the body, it is called **external fertilisation**. When fertilisation takes place inside the body, it is called **internal fertilisation**. When fertilisation takes place in a test tube, the offspring are called **test tube babies**. Fertilisation that takes place outside the human body is **in vitro fertilisation**. Super **cell** - the **zygote**, marks the beginning of a new individual. The zygote divides repeatedly to form a **ball of cells**, which, in turn, develops into **tissues** and **organs** of the body. The development of the **embryo** takes place in the mother's **uterine wall**. All parts of the body start developing in an embryo, called **foetus**.

Oviparous and Viviparous Animals

Oviparous animals undergo **external fertilisation,** while **viviparous animals** undergo **internal fertilisation**. The **zygote** undergoes rapid division after **fertilisation** and moves down the **oviduct**. During this period, many protective layers form as a **hard shell** around the developing **embryo**.The chick **hatches** from the egg after three weeks. There are three distinct stages in the **life cycle of a frog** - **egg, tadpole** and **adult**. In the first stage, the egg fuses with a **sperm** to form a **zygote**. The zygote further divides to form an **early tadpole**, which matures into a **late tadpole**.
During **metamorphosis**, the **larvatransforms** into an adult frog. Our bodies undergo certain changes as we develop from childhood to **adolescence** stage.

Asexual Reproduction in Animals

In **asexual reproduction**, only **one parent** is involved. Binary fission involves the **splitting** of an organism into two. Amoeba is a **simple, unicellular organism**. Reproduction in amoeba begins with the **division of the nucleus**. The parent organism divides into two individual organisms is **fragmentation** or **binary fission**. **Bulges** that appear as **outgrowths** on hydra are called **buds**. These buds separate as new individuals, called **budding**. **Dolly** was the first **cloned mammal,** and is **genetically identical** to its parent sheep.
Cloning is creating an exact copy of a **biological entity**. A**clone** is created by inserting the **complete genetic material** of a **regular body cell** from a **donor** into a **recipient**. Sheep are **viviparous animals,** and so **propagate** their offspring sexually. **Sir Ian Wilmut** from **Roslin Institute in Edinburgh, Scotland** created Dolly.

SUMMARY

A **mammary gland** cell of the **Finn Dorsett sheep species** and an **enucleated cell** of the **Scottish Blackface ewe** were subjected to an **electric pulse** to cause **fusion,** thereby resulting in a **fertilised egg** that developed into a **zygote.** The embryo was **implanted** into the uterus of the ewe to undergo **rapid cell division** to form a **foetus**. Offspring **inherit characteristics** from both the parents. Dolly received all the **genetic information** from the Finn Dorsett sheep. Dolly produced several **offspring**. Cloning involves certain **abnormalities.** Dolly suffered from **arthritis**. Cloning could impact **mental development**. Advocates of **human therapeutic cloning** believe that cloning could help in producing organs for **transplantation** and in **regenerative medicine**.