

LESSON-21 REPRODUCTION AND POPULATION CONTROL

The ability to reproduce is one of the essential characteristics of living beings. It involves the transmission of genetic material from the parental generation to the next generation, thereby ensuring that characteristics not only of the species but also of the parental organisms are perpetuated. In this lesson, types of reproduction, reproduction in sponges, insects and humans are discussed. A section deals with problems of population explosion of humans

REPRODUCTION

- A process by which a living organism is able to produce more of its own kind is known as reproduction. In asexual reproduction only one organism is involved, no gametes are produced and no fertilization takes place. Gemmules are reproductive bodies for asexual reproduction in sponges.
- In sexual reproduction both male and female gametes are produced and the process of fertilization takes place. The human reproduce sexually.
- The age of 13-14 years in human males and 11-12 years in human females is called puberty in human beings. At this age, sex organs get matured and several secondary sexual characteristics appear in them.

REPRODUCTION IN HUMANS

- Reproduction in humans can be studied in two parts: (a) Reproductive system, and (b) Fertilization, pregnancy and development of the embryo.
- The age of 13-14 years in human males and 11-12 years in human females is called puberty in human beings. At this age, sex organs get matured and several secondary sexual characteristics appear in them.
- The **Male reproductive system** consists of a pair of testes, a pair of epididymis, a pair of vasa deferentia, urethra, penis and accessory glands.

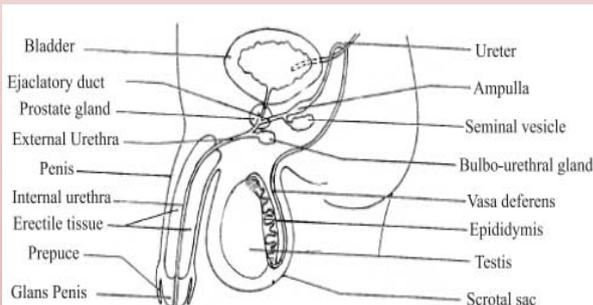
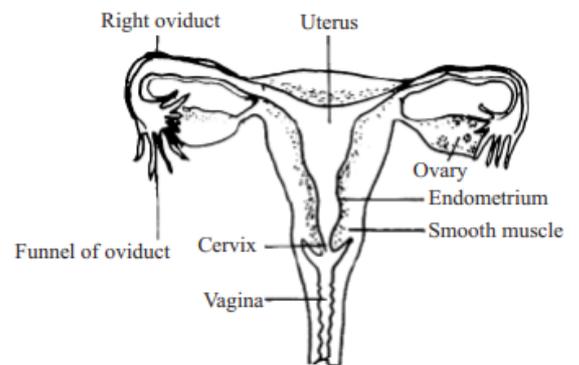


Fig. 21.1 Male Reproductive system

FEMALE REPRODUCTIVE SYSTEM

The female reproductive system consists of a pair of ovaries, a pair of Fallopian tubes, uterus, vagina and external genitalia.

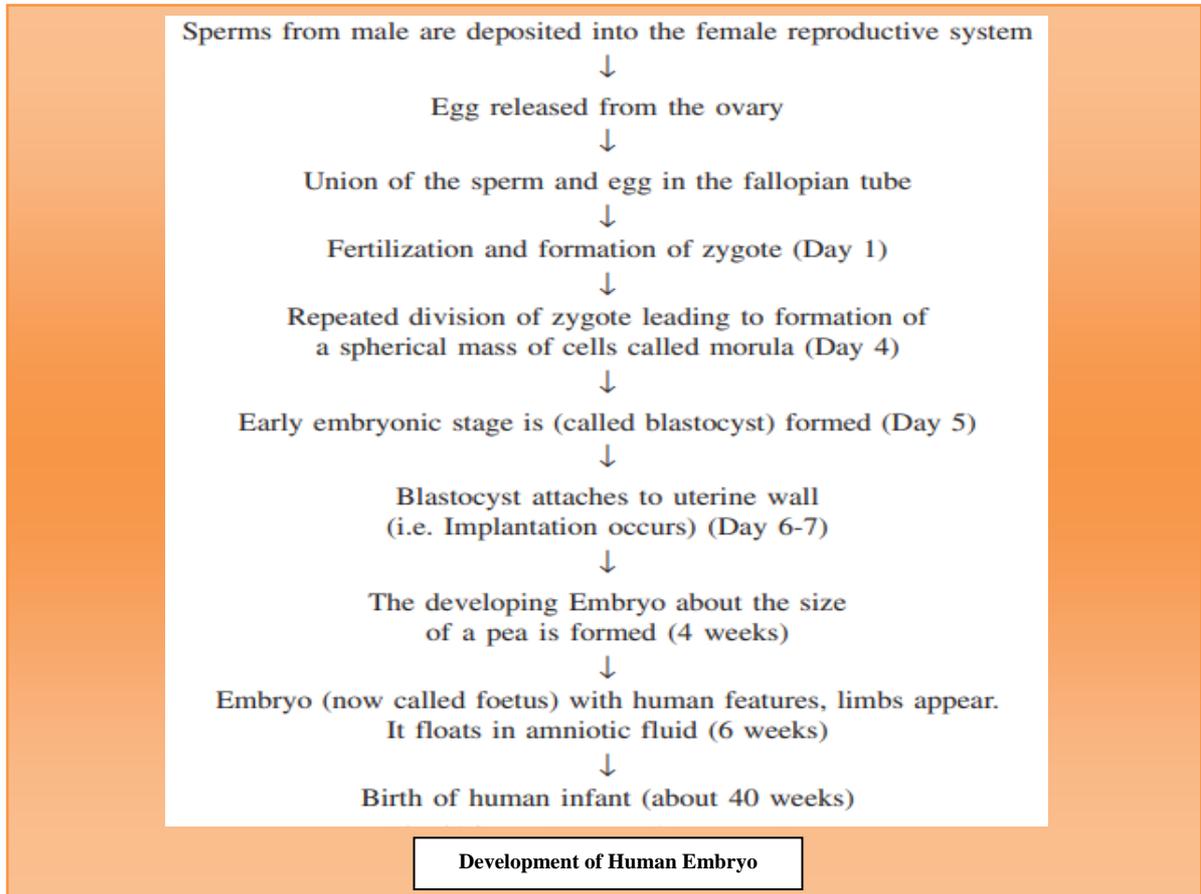


Menstrual Cycle in Human Females

- The onset of menstruation in a female is called menarche. It starts at an age of about 11-13 years. The permanent stoppage of menstruation in a female is called menopause.
- It occurs at an age of about 45-50 years. At the time of menopause, ovulation and menstruation stop and the reproductive organs decrease in size.
- Between puberty and menopause, the female reproductive system passes through a regular monthly sequence of events called the **menstrual cycle**.

FERTILIZATION AND IMPLANTATION

- Spermatozoa remain viable in the female genital tract from 24 to 72 hours. For fertilisation, sperms are introduced into the female body. One sperm fuses with the ovum in the fallopian tube
- The fixing of the embryo in the uterine wall is called implantation.
- Placenta is an association between maternal and foetal tissues meant for exchange of material between pregnant mother and developing foetus



- Lactation is the production of milk in a mother soon after delivering the baby.
- Twins are of two types—fraternal and identical twins.
- There are many new medical techniques in the field of reproduction to help infertile males and females produce babies i.e. Test Tube babies and Artificial Insemination.

POPULATION-PROBLEMS AND CONTROL

Human population: The sum total of human beings on earth

Demography: The scientific and statistical study of human population. It deals Heredity with population growth, its composition (age, sex ratio) and its distribution in space.

Population density: The number of individuals per square kilometre (km²) at any given time.

Birth rate (Natality): The number of live births per 1000 individuals of population per year.

Death rate (Mortality): The number of deaths per 1000 individuals of population per year.

Population growth rate: The difference between the birth rate and the death rate.

Census: The official data of registered number of people in a selected area

- Advancement in agriculture, medicine, industrialization, religious and social customs, illiteracy, economic reasons and desire for a male child are some factors responsible for the unchecked growth of population in India.
- The enormous increase of the population can be controlled by education and some Preventive methods (Rhythm method, Intrauterine devices, Oral contraceptive pills and Vasectomy and Tubectomy) for population control and family planning.

Test Yourself

1. Write a note on: (i) Lactation in humans (ii) Menstrual Cycle in Human Females.
2. Draw the labelled diagram of the male reproductive system.
3. State the steps involved in the Development of human embryo?