

Science Class 10 Notes for Diversity in living Organisms

1. The production of new organisms from the existing organisms of the same species is known as reproduction.

2. Asexual Reproduction : Modes of sexual reproduction used are binary fission, multiple fission, Budding, spore formation, regeneration, vegetative propagation, tissue culture, fragmentation

3. Sexual Reproduction : In sexual reproduction, a male gamete (germ cells) fuses with a female gamete to form a new cell called 'zygote'. This zygote then grows and develop into a new organism in due course of time.

When male gamete and female gamete fuse, they form a zygote and the process is known as fertilization.

Fertilization is of two types :- External fertilization and Internal fertilization.

4. Sexual Reproduction in Flowering Plants :

Flower is meant essentially for sexual reproduction.

- Pollination is the process in which pollen grains are transferred from the anther to stigma of the carpel. It is of two types self pollination and cross-pollination.
- In the fertilization process primary endospermic nucleus is formed.
- After the fertilization process, ovary develops into the fruit whereas ovules into the seed.

5. Reproduction in Human Being : The sex organ in males are testes and ova in females.

- Male reproductive organ consist of a pair of testes, vasdeferens, a pair of epididymis, a pair of ejaculatory duct, urethra, pairs of accessory gland.
- Female reproductive part consist of a pair of ovaries, a pair of fallopian tube, uterus, vagina, external genitalia, mammary glands and accessory glands. Ovary produces the female gametes (eggs or ova) and female sex hormone (estrogen).
- If sperms are present, fertilization of ovum takes place in the upper end of the fallopian tube.
- Bleeding accompanied by discharge of soft tissue lining the reproductive tract is menstrual flow. It last for 3-5 days.
- Secretory phase lasts for 12-14 days.
- Fertilization process occurs in fallopian tube. In this process zygote is formed. In this process umbilical cord is produced which is attached to foetus. During this
- process two hormones are produced which are estrogen and progesterone.

- Progesterone stops menstruation and prevents ovulation. The placenta protects the body against diseases. Due to contraction of uterine muscles young one is expelled and the phenomenon is called parturition.
- If the egg is not fertilized, it lives for about one day. Since the ovary releases one egg every month, the uterus also prepares it self every month to receive a fertilized egg.
- After the age of 45-50 years menses stop and process is called menopause.
- Fertility control can be done chemically, mechanically or surgically.

6. Reproductive Health Barrier methods

(i) Mechanical barrier method:- They prevent contraception by preventing either sperms from entering uterus or preventing implantation if fertilization has occurred.

The instruments are condom, cervical cap, diaphragm & ICDU method.

(ii) Hormonal method: They are used by women for suppressing the production of ovum. i.e. , oral pills, Implants morning after pills.

(iii) Chemical contraception: They are creams, jellies and foaming tables which are placed in vagina for killing the sperms at the time of coitus.

(iv) Surgical techniques:—

(a) **Vasectomy:** — The two vasa deferential of the male are blocked by cutting a small piece of tying the rest. This prevents the passage of sperms from testes to semen.

(b) **Tubectomy:**— A portion of both the fallopian tubes is excised to ligated to block the passage of ovum

7. Sexually Transmitted Diseases (STDs)

It is a group of infections caused by different types of pathogens that are transmitted by sexual contact between a healthy person and an infected person. The sexually transmitted diseases are also called venereal diseases (VDs). Some 30 different types of STDs are known. For example : Gonorrhoea, Syphilis, Trichomonas, Genital warts, AIDS.