

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 develops 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, vas deferens, 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 itself 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 tablets which are placed in vagina for killing the sperms at the time of coitus.

(iv) Surgical techniques:—

(a) Vasectomy: — The two vasa deferentia 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.