

CLASS 10TH MID TERM

SCORE
BOOSTER



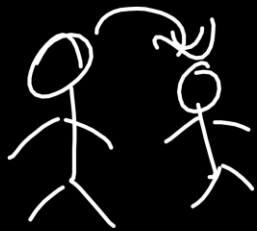
**HOW DO ORGANISMS
REPRODUCE**

- ONE SHOT

BIOLOGY

What do you mean by REPRODUCTION?

Reproduction is the biological process of producing offspring that are biologically or genetically similar to the parent


Biological
process



↳ Genetically/Biologically Similar

Why is reproduction considered to be important?

Your Roadmap to Success

Stay on track with a structured schedule that covers every essential topic you need for mid-term success. Each class is designed to reinforce core concepts and provide ample practice to ensure you're fully prepared. Follow the timetable, access class PDFs, and watch video lessons—all at your own pace. Your journey to acing the exams starts here!

13th Sept 2024

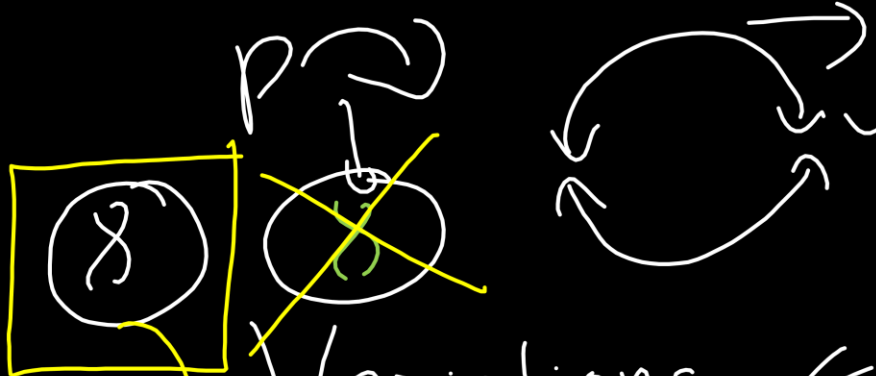
Topic	PDF	Link
Real Numbers		
Life processes		

Download the class PDF now ! link in the description.

Why is reproduction considered to be important?



For maintenance of **continuity of species**



For **maintenance of the population size** so that the ecosystem could remain **stable.**

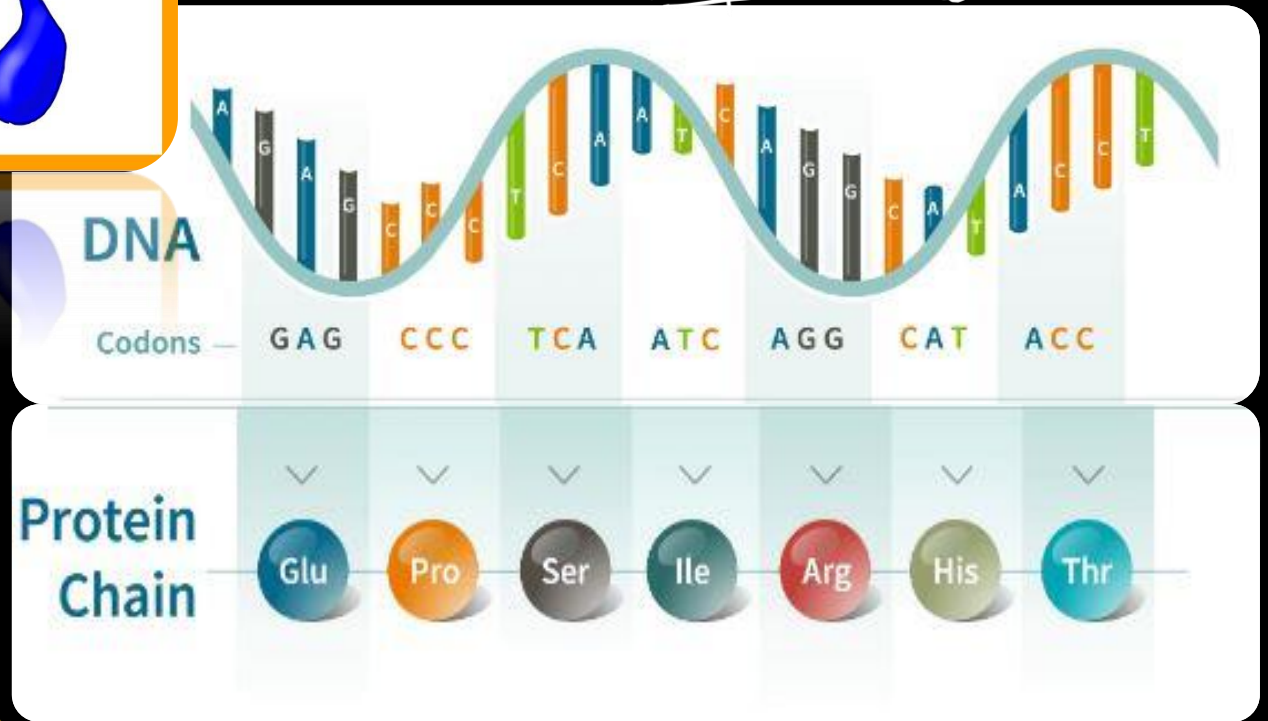
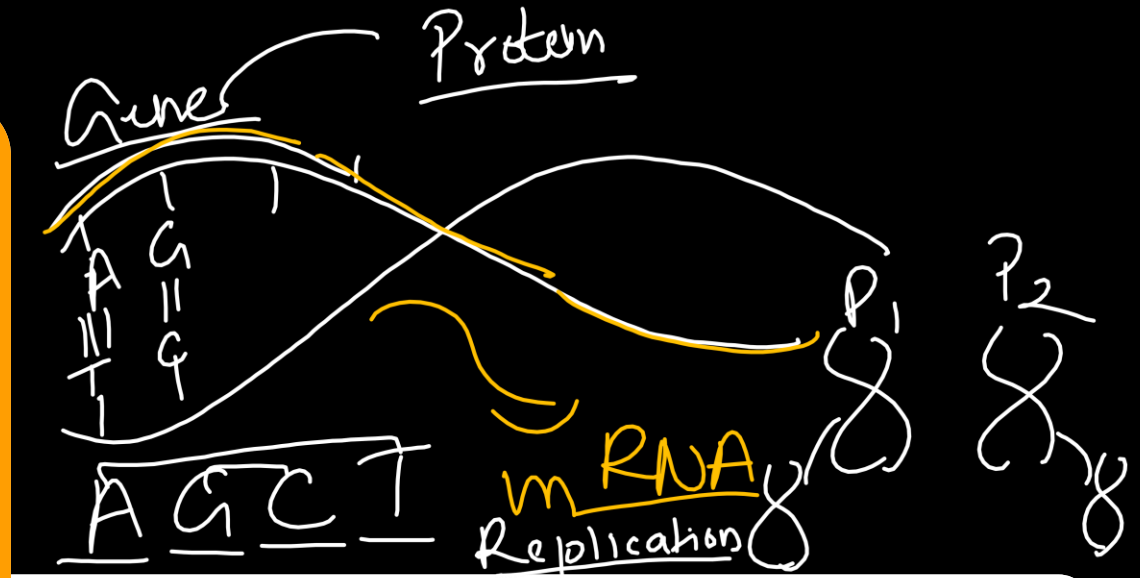
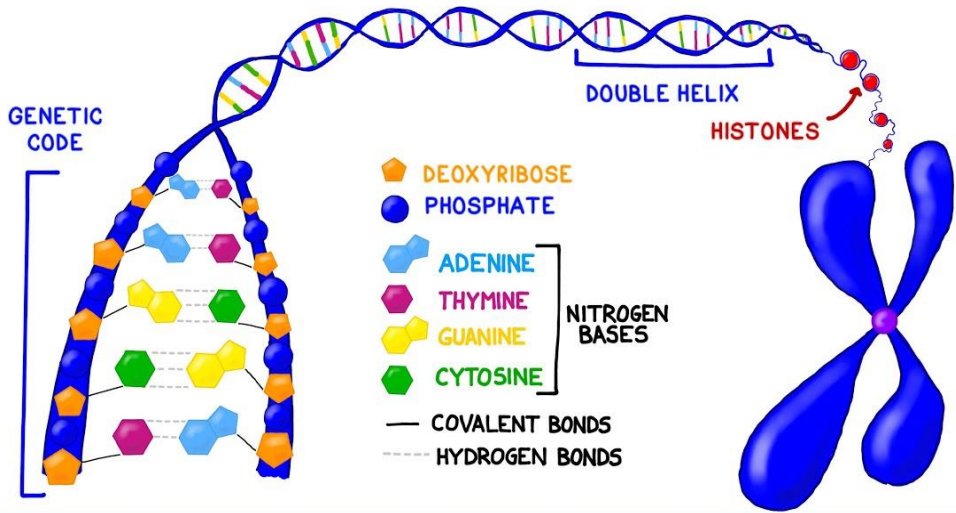
For **creating variations** which could **lead to evolution** of organisms which could survive **unfavorable conditions.**

Variation → Survive
Survive - evolution -

HOW does variations occur?



WHAT IS DNA?



TAG AGC

Protein ← Aa — Amino Acid

So variations occur because of DNA.

- DNA stands for "Deoxyribonucleic acid".



- DNA carries "Genes".

- Genes are sections of DNA that contain the set of instructions to produce one specific molecule in your body, usually a protein. These proteins control how our body grows and works.

ATCC
| |
Aa Aa

"Variations occur due to errors during DNA replication/duplication."





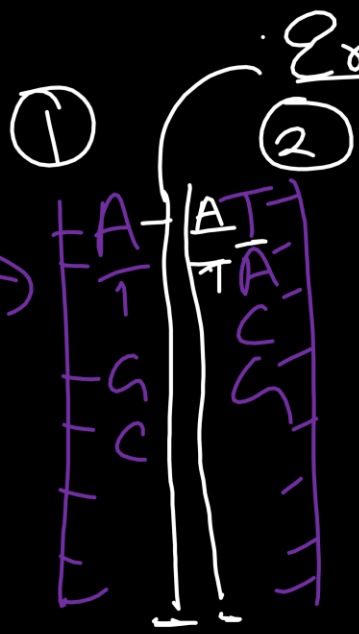
Sperm X Ovum \rightarrow Fertilization \rightarrow Zygote

Sexual Reproduction

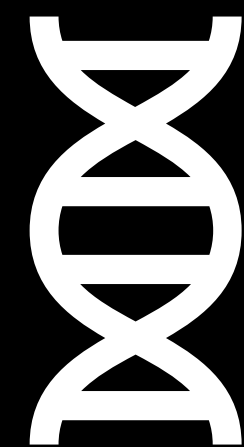
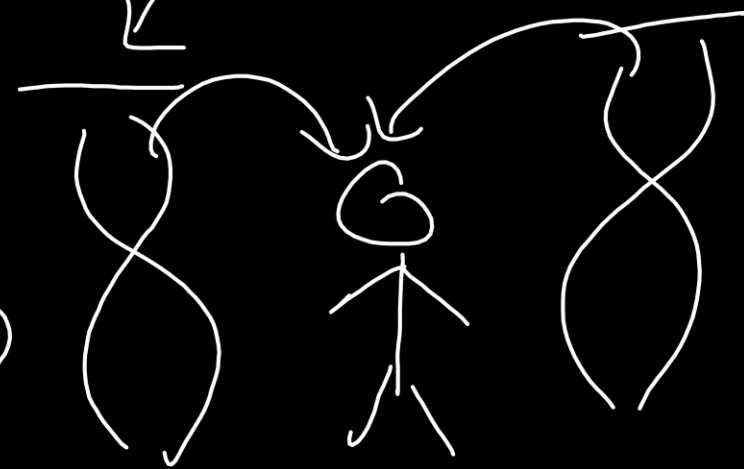
It is a type of reproduction that involves the production of an offspring by the fusion of male and female gametes (Presence of fertilization)

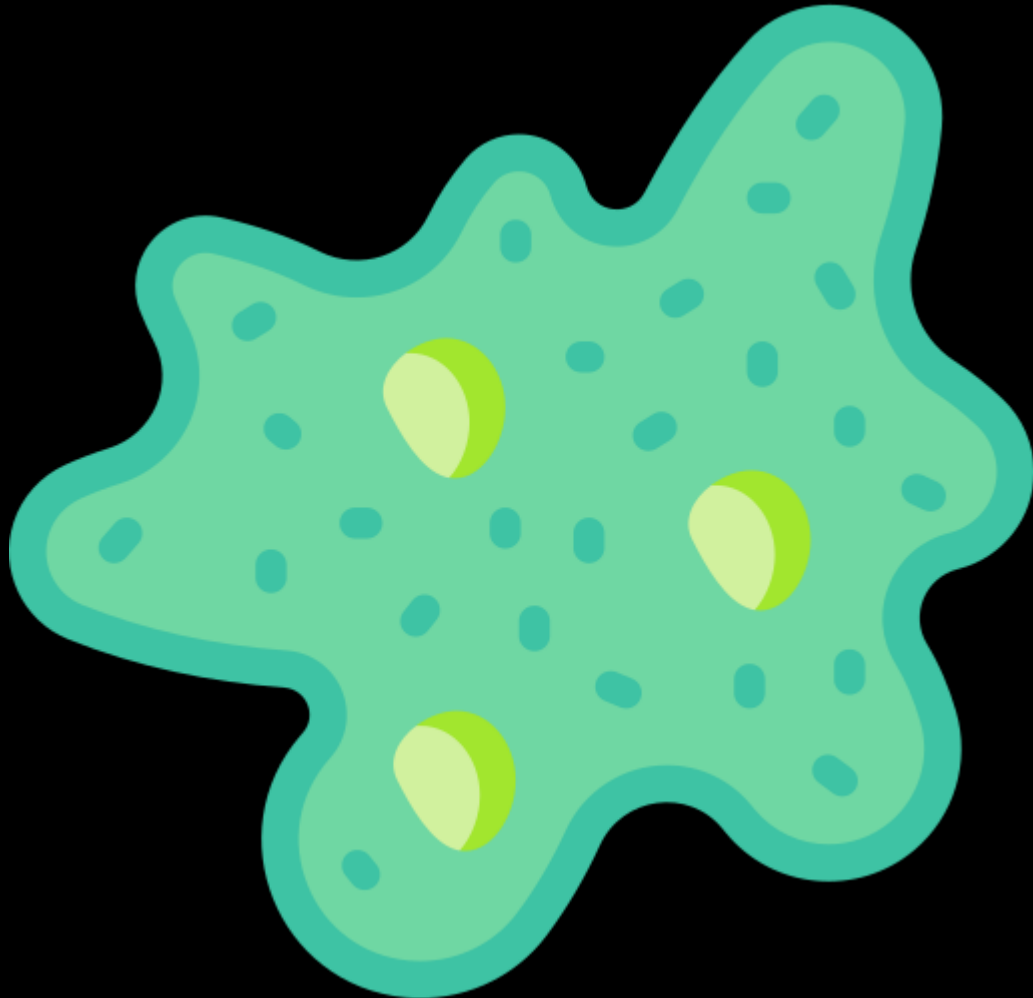
Sexual Reproduction

higher variations



Errors while copying





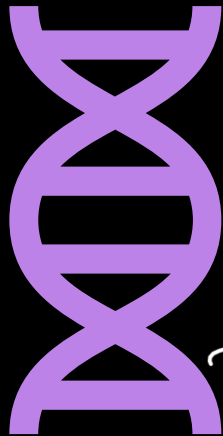
Asexual Reproduction

It refers to the type of reproduction in which there is no fusion of gametes (absence of fertilization).

Asexual Reproduction

Parent 1

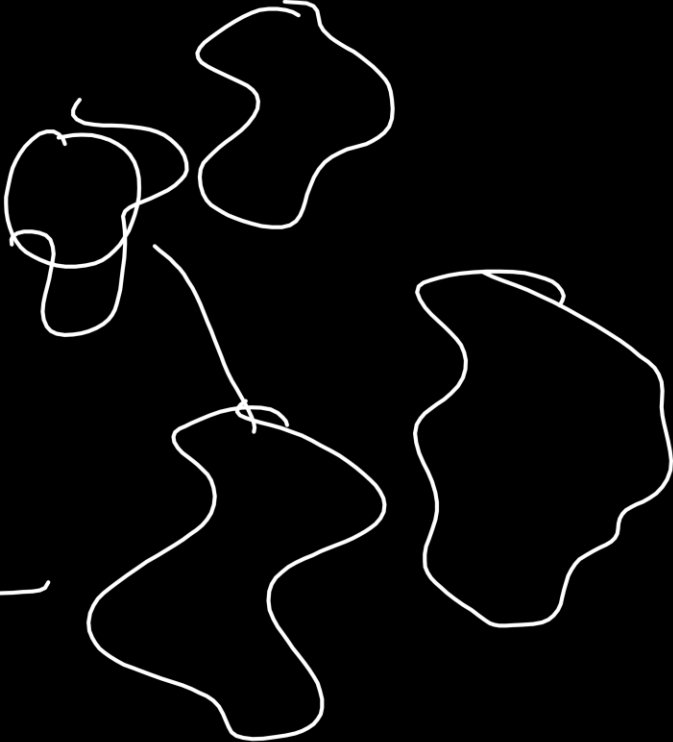
DNA



Variation

errors in copying

offspring



1. What is the importance of DNA copying in reproduction?

Solution : DNA (Deoxyribonucleic acid) is the genetic material found in the chromosomes, which are present in the nucleus of a cell. The DNA is the information site for making proteins and each specific type of protein leads to a specific type of body design.

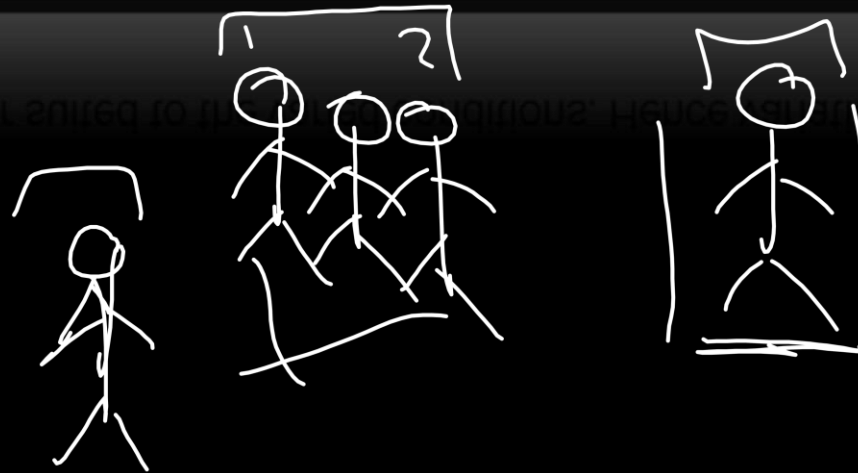
Thus, it is the DNA molecule that determines the body design of an individual. Therefore, it can be concluded that it is the DNA that gets transferred from parents to offsprings and makes them look similar.

- It maintains the characteristics of species.
- It maintains the continuity of life.
- From this, the characteristics and features of organisms are transformed to their progeny.
- It produces variations in organisms which is the basis of evolution of new species.

Why is variation beneficial to the species but not necessarily for the individual?

Answer:

The various populations of organisms interact with many types of ecological niches. This is important for them to survive in given conditions. In case of any damage caused to the ecological conditions of the population, the population gets adversely affected. The organisms which are able to survive, may reproduce to develop population which is adapted or suited to the varied conditions. Hence variation is beneficial to species, but not to the individuals.



How does reproduction help in providing stability to populations of species ?

Answer:

The introduction of variations during reproduction provides stability to the populations of various species by preventing them from getting wiped out during adverse conditions. Reproduction also helps to generate copies of individuals which are suited to a particular environment.

What are the advantages of sexual reproduction over asexual reproduction ?

Answer:

(i) In asexual reproduction, the offspring are almost identical to their parent because they have the same genes as their parent. So, much genetic variation is not possible in asexual reproduction. This is a disadvantage because it inhibits the further evolution of the organism.

(ii) In sexual reproduction the offspring, although similar to their parents, are not identical to them or to one another. This is because the offspring receive some genes from the mother and some from the father.

Because of the mixing of genes of mother and father in various different combinations, all of the offspring have genetic variations. In this way, sexual reproduction leads to a greater variety in population. This means that a species (animal or plant) can adapt quickly to changes in its surroundings. This is because there are always likely to be some individuals which are more suited to the changes than others, and these individuals will survive and reproduce themselves.

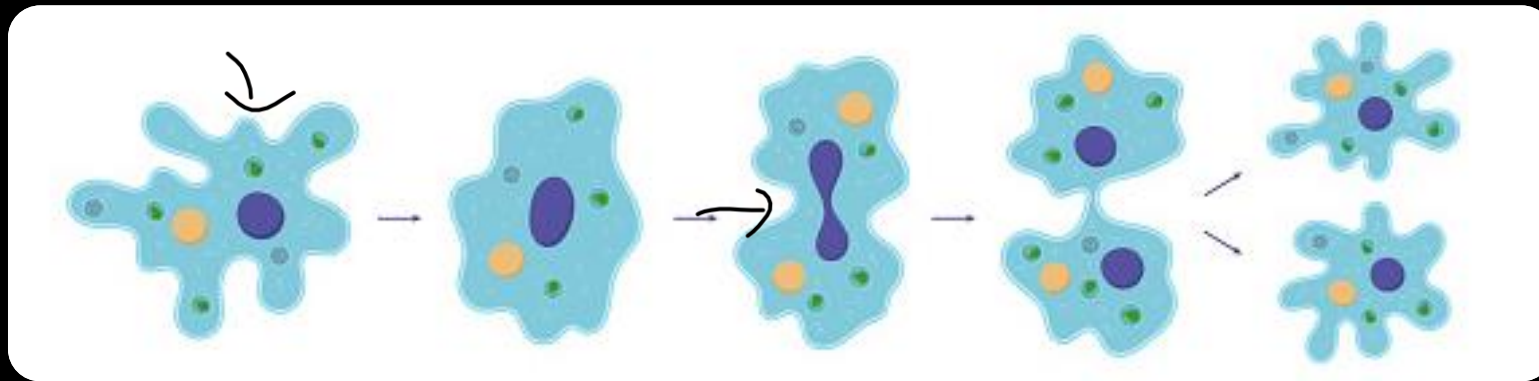
Fission

- It is a mode of asexual reproduction which occurs in unicellular organisms, such as Amoeba, Paramecium, Planaria, Euglena and other protozoa.
- It involves the **division of the parent body into two or more daughter individuals identical to the parent.**

- It is the **division** of the body of an individual **into two equal halves**, each of which functions as an independent daughter individual.
- Many bacteria and Protozoa split into two halves through binary fission.



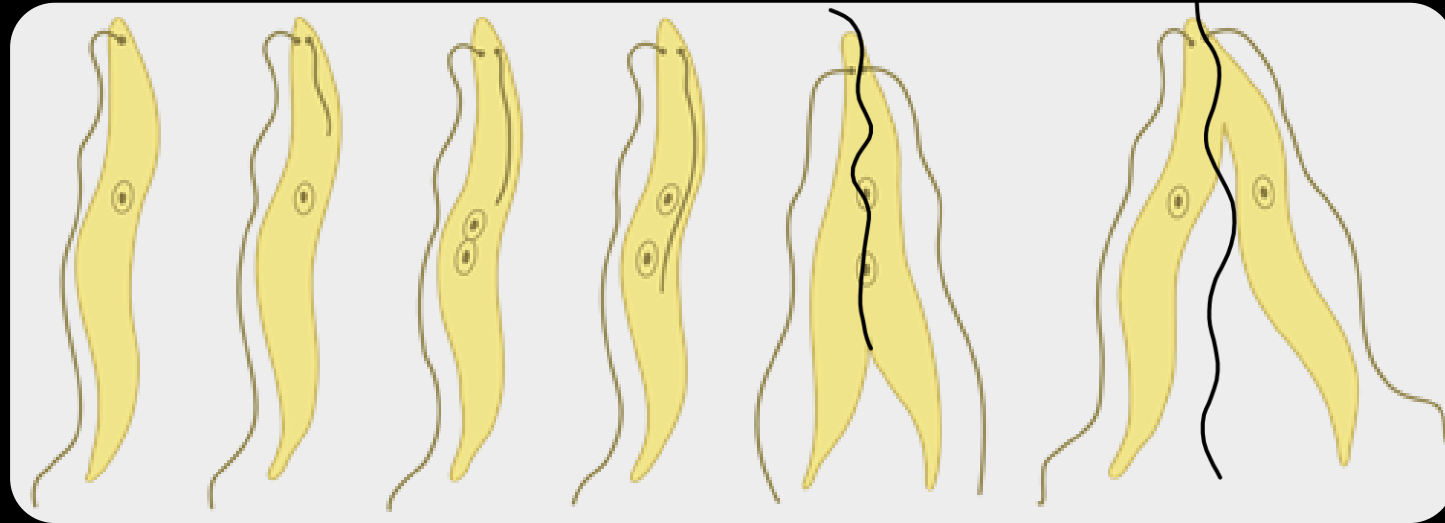
**Binary
Fission**



Simple Binary Fission
(Irregular Binary Fission)

Division can occur through any plane, i.e., the plane of division can pass through any axis

Amoeba

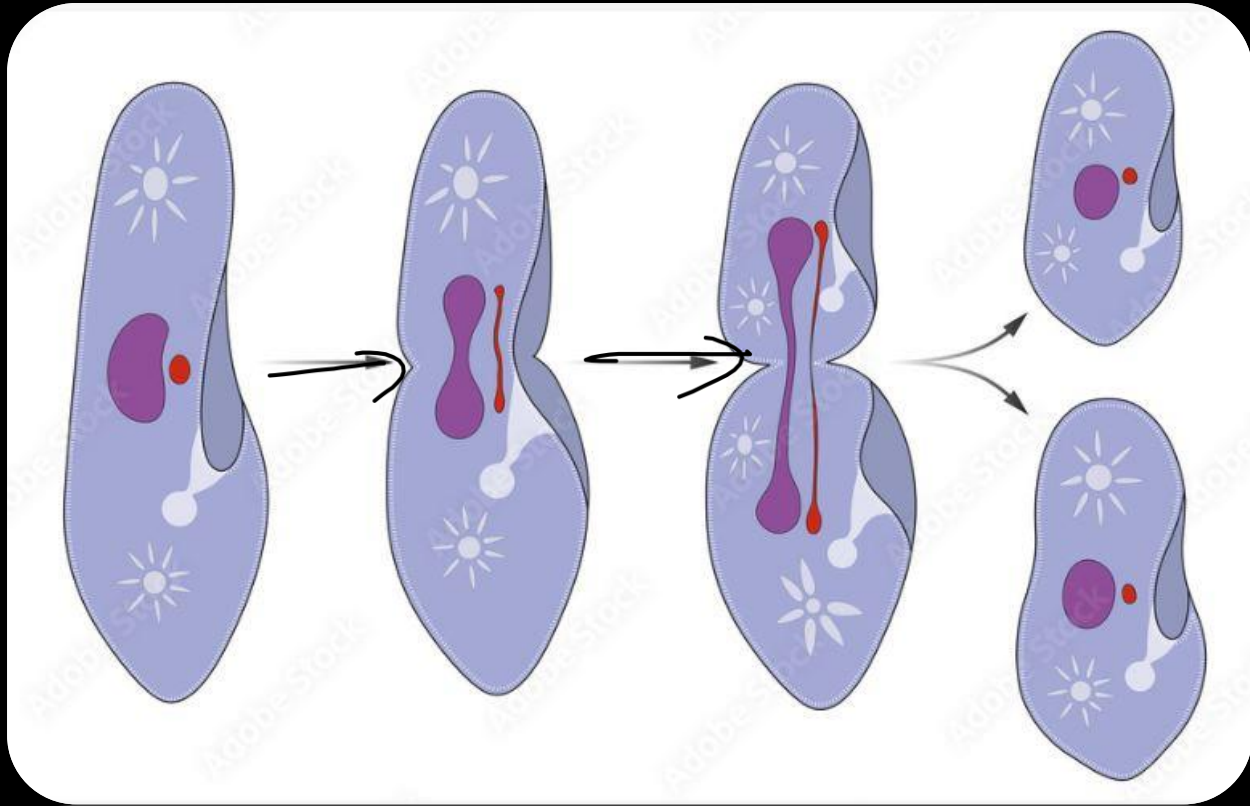


Longitudinal Binary Fission

The plane of fission passes along the longitudinal axis of the organism.

e.g., Euglena, Vorticella and Leishmania. Leishmania causes kala azar.

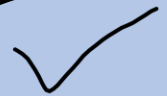
Kala Azar
Leishmania



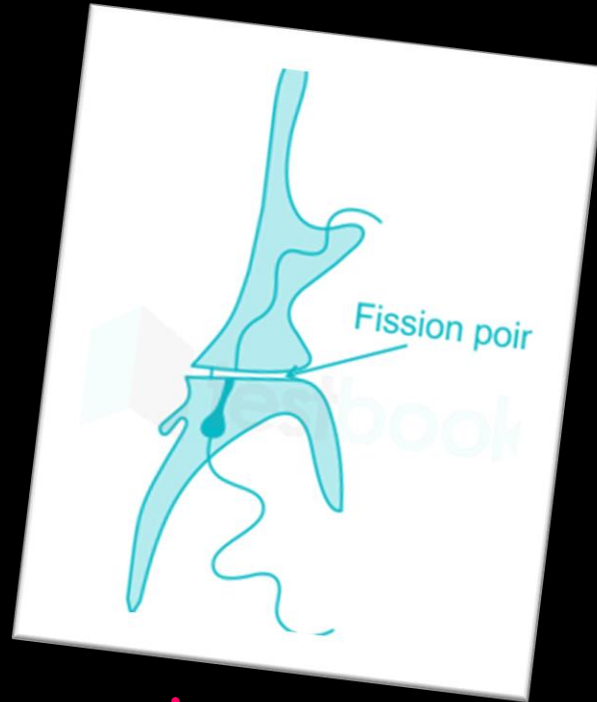
Transverse Binary Fission:

The plane of binary fission runs along the transverse axis of the individual.

e.g., Paramecium, diatoms, bacteria.



Paramecium



Oblique
Binary
Fission:

**The plane of division
is oblique.**
e.g., Ceratium

Ceratium

**KEEP
IN
MIND**

•In binary fission, the parent body as a whole forms the reproductive unit and disappears after its division into daughter individuals. ✓

•Therefore, the organisms that undergo binary fission are said to be immortal as the parent doesn't die and continues to live in the form of daughter cells.

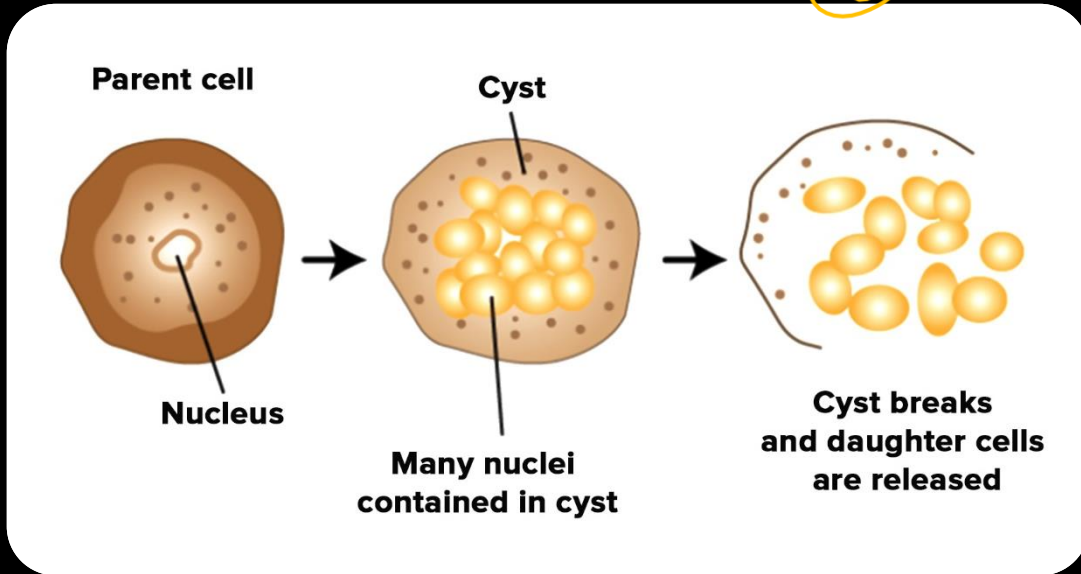




Some unicellular organisms divide into many daughter cells simultaneously by multiple fission.

• This multinucleated body divides into as many parts as the number of daughter nuclei and forms many daughter individuals.

• This type of fission, where many individuals arise from a single parent, is called multiple fission.



Plasmodium
↳ Malaria

Multiple Fission

3. How does binary fission differ from multiple fissions?



Binary Fission	Multiple Fission
It gives rise to two daughter individuals	It forms many (more than two) daughter individuals
It occurs during <u>favorable conditions</u>	It can occur under favorable (e.g. <u>Plasmodium</u>) as well as unfavorable conditions (<u>Amoeba</u>)
Nucleus of the parent cell divides only once	Nucleus of the parent <u>cell undergoes repeated</u> to form number of daughter nuclei.
<u>Cytoplasm divides after nuclear division</u>	Cytoplasm does not divide after every nuclear division.
No part of the parent body is left unused	A part of the body, covering and residual cytoplasm, is left behind.
Example – Amoeba, Paramecium	<u>Plasmodium</u> , Amoeba(Encysted)

Spirogyra
algae



It is the process of breaking up of the body of an organism into two or more parts called fragments, each of which grows into a new individual.

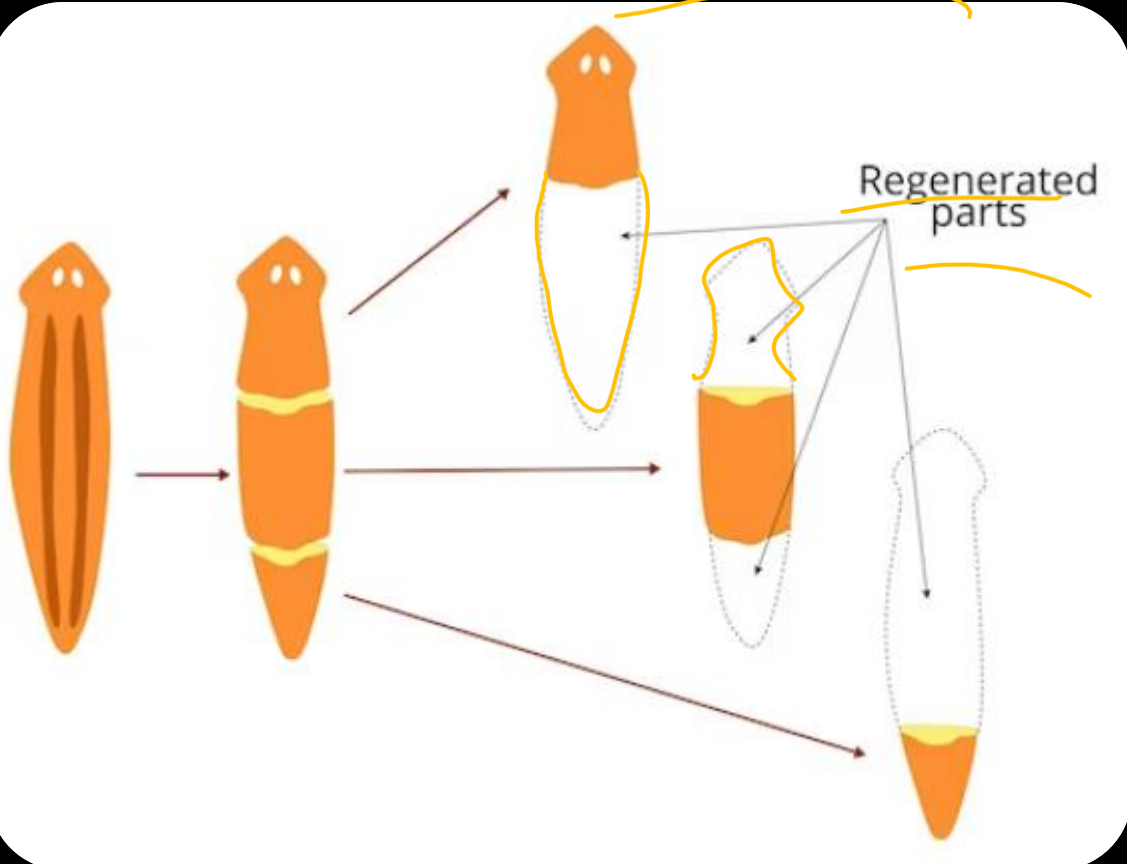
Fragmentation is quite common in simple multicellular organisms such as algae, fungi and bryophytes.

e.g., Fragmentation is commonly observed in green filamentous alga, Spirogyra.



Fragmentation

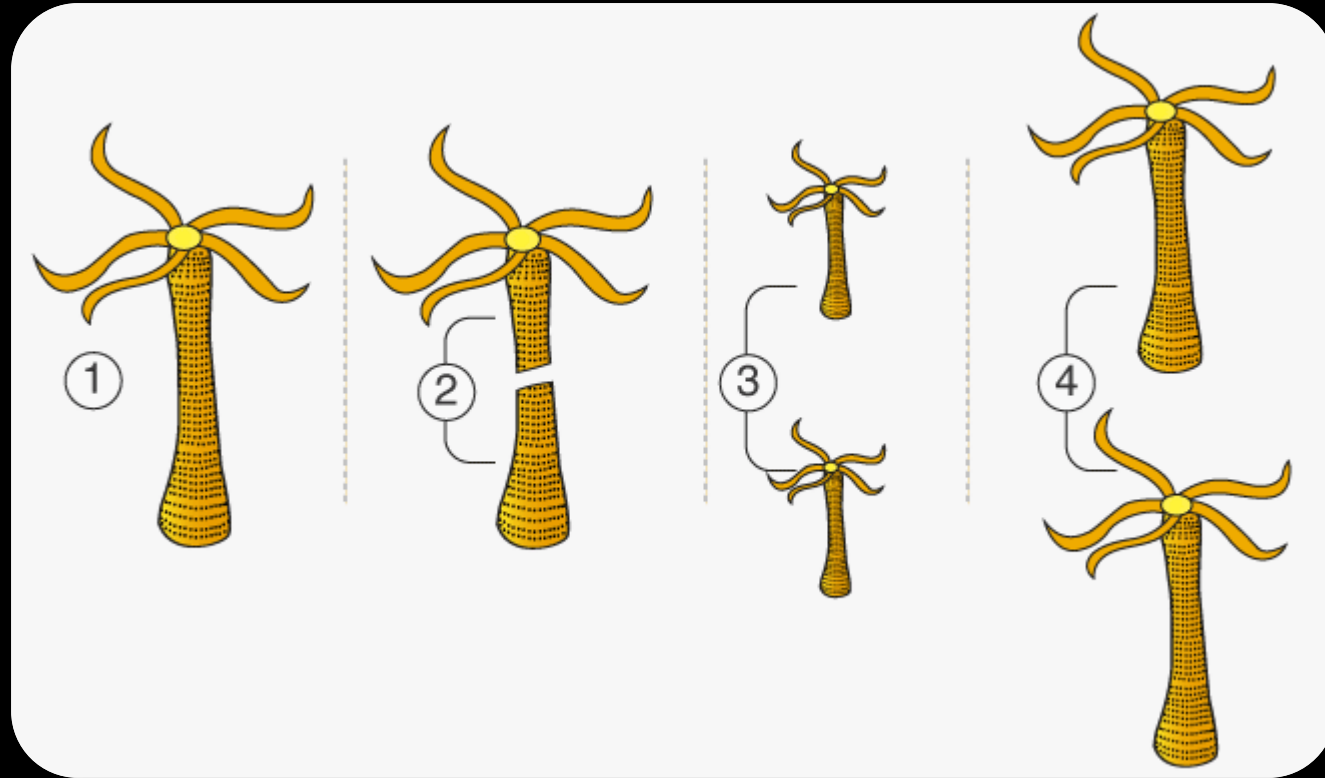
Planaria



Regeneration is the process of renewal or restoration of any lost part of the body.

e.g., simple animals like Hydra and Planaria can be cut into any number of pieces and each piece grows into a complete organism.

Regeneration



Hydra

Regeneration

Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration ?

Answer:

In complex multicellular organisms, specialised cells make up tissues, tissue make up organs, organs make up organ systems and finally organ systems make up organisms. Since complex multicellular organisms have a very high degree of organisation in their body, they cannot be reproduced from their cut body parts by the process of regeneration.

For example, a dog is a complex multicellular organism which cannot be regenerated from its cut body part say, a cut tail. This is because the cells present in the cut tail of a dog cannot produce dog's organs like heart brain, lungs, stomach, intestines and limbs, etc, needed for the making of a complete dog.

Question 66. Choose the organism which does not reproduce through fission:

a. Plasmodium

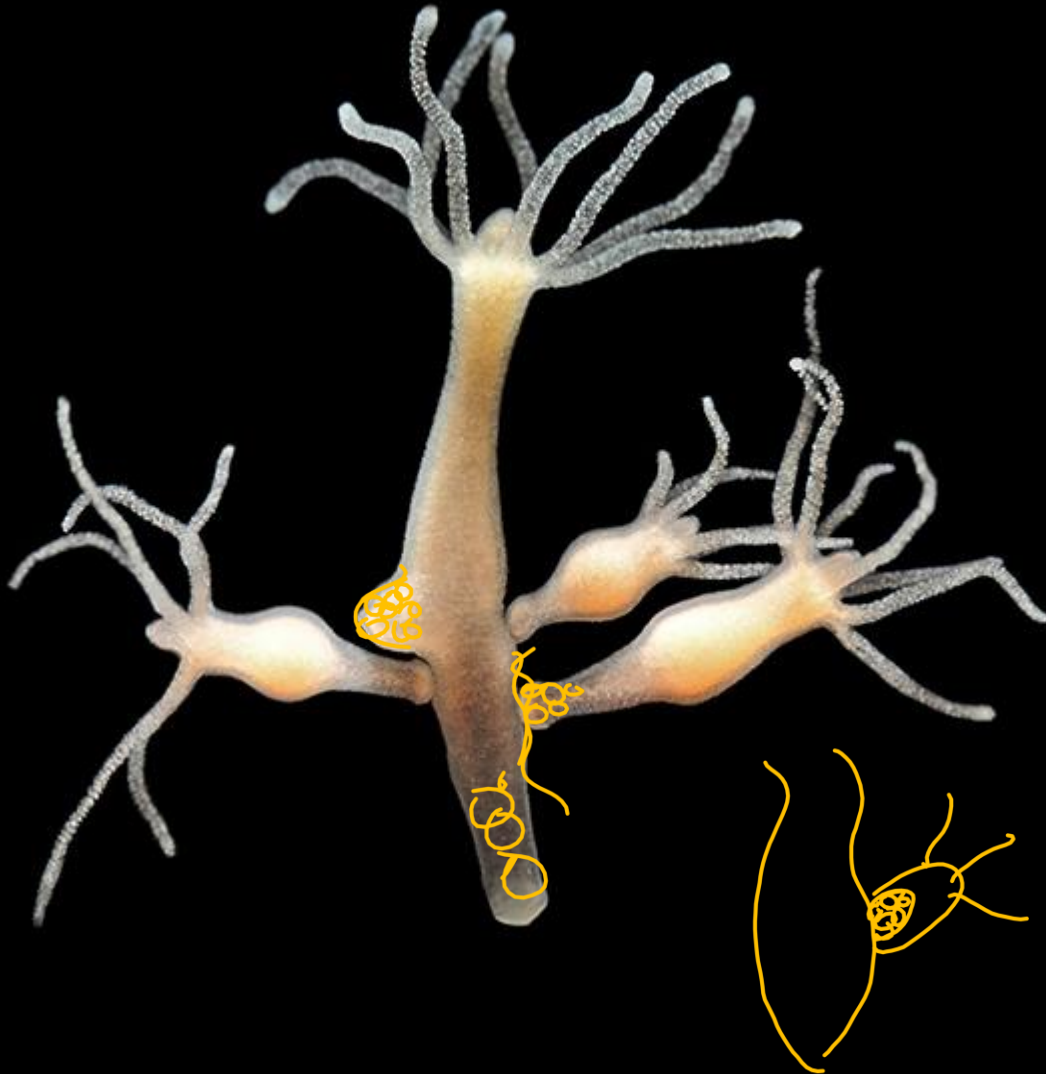
b. Hydra

c. Amoeba

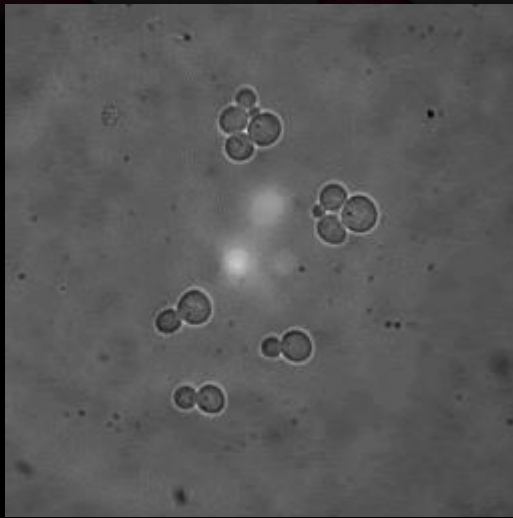
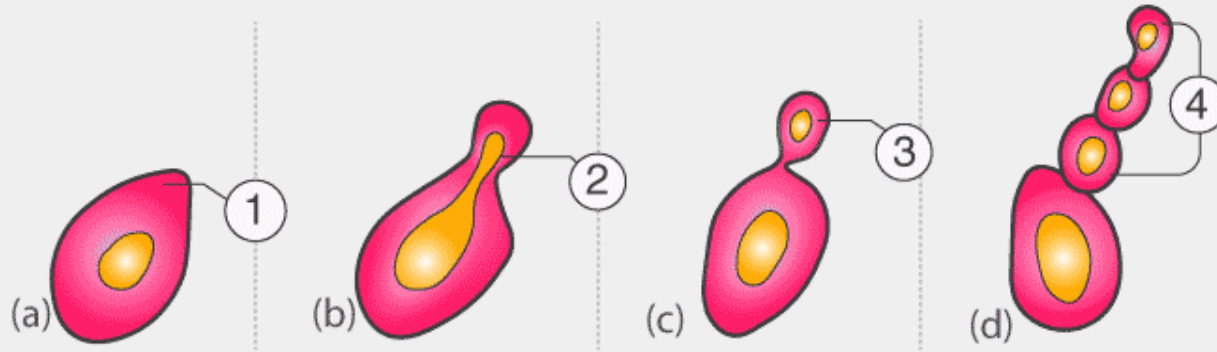
d. Bacteria

Budding

Asexually



- Few multicellular animals (e.g., Hydra) produce small buds.
- A bud develops as an outgrowth due to repeated cell division at one specific site .
- These buds develop into tiny individuals and when fully mature, detach from the parent body and become new independent individuals.
- Organisms such as Hydra use regenerative cells(stem cells) for reproduction in the process of budding.

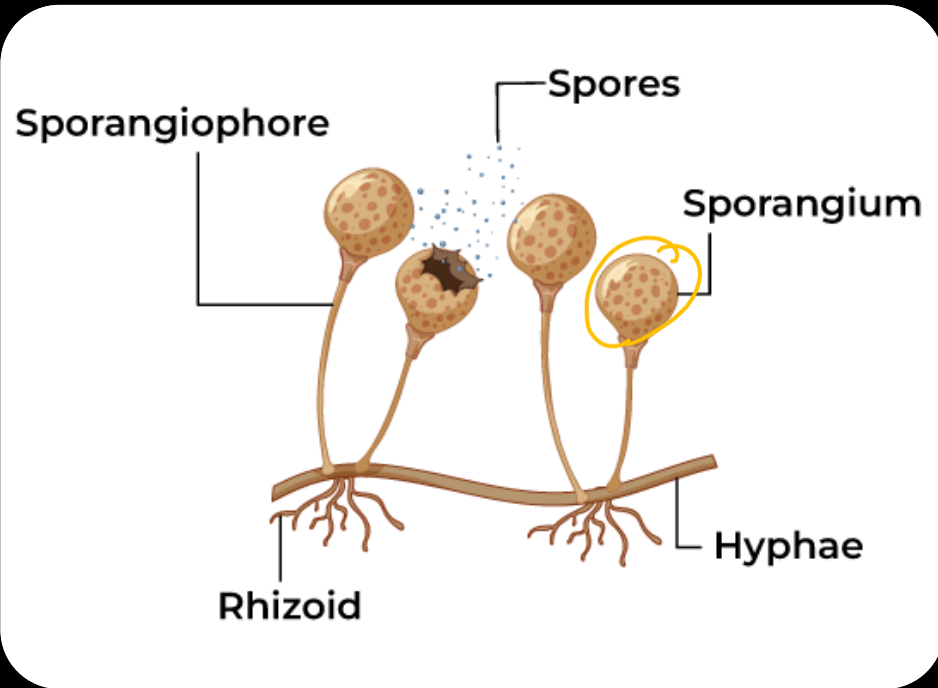


- **Budding is also observed in yeast. Yeast is an unicellular organism (fungus).**
- **A small protuberance (outgrowth) appears on the upper part of an adult cell, this gradually grows in size.**
- **From this newly budded cell, another bud appears at the tip.**
- **This process continues 3-4 times, resulting in a chain of buds which grow into yeast cells.**

Budding

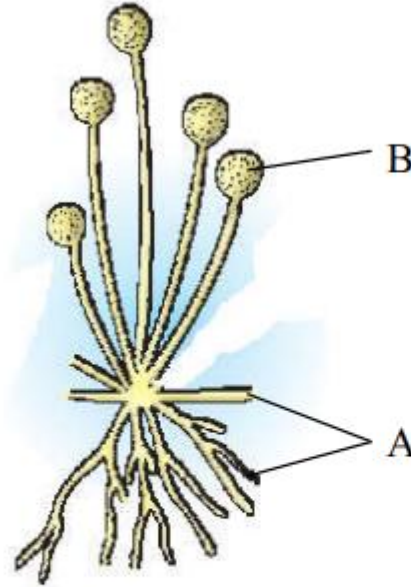
Spore Formation

Rhizopus



- Spore formation is a common form of asexual reproduction, which occurs in Rhizopus (Bread Mould)
- Spores are minute, single-celled, thin or thick-walled propagules, released from the parent body from the tiny blob-on-a-stick structures known as **Sporangium** present at the top of stalk like structures called **mycelium** which instead is formed of many thread like structures known as **hyphae**.
- Generally, spores are dispersive in nature and are able to withstand unfavorable environmental conditions such as dryness, extreme heat or cold.

In bread mould, the structures labelled A and B respectively are :



(A) hyphae and spore

(B) root and sporangium

(C) hyphae and sporangium

(D) root and spores

(C) μλβμαε αυρ ζβοιανθιων

(D) ιοοι αυρ ζβοιεε

(A) μλβμαε αυρ ζβοιε

(B) ιοοι αυρ ζβοιανθιων

How will an organism be benefited if it reproduces through spores ?

Answer:

An organism is benefited by reproducing through the spores because spores are surrounded by a thick layer which protects them in adverse conditions. When the favourable conditions occur, these spores start to grow again. In this way they are successfully live in unfavourable conditions.

Vegetative propagation

- Vegetative propagation or vegetative reproduction is the growth and development of a plant by asexual means through somatic plant parts like stem , leaf and roots.
- Here there is no involvement of seeds.
- There are two types of vegetative propagation – **Natural** and **Artificial vegetative propagation**

Vegetative propagation

Significance of Vegetative Propagation :

- *Even seedless plants or plants that doesn't have viable seeds can reproduce*
- *Plants that produce seeds can also reproduce and give rise to clones*
- *This mode of reproduction is faster.*



Natural Vegetative Propagation

Without the interference of human, if a plant grows naturally through the vegetative parts then its known as Natural vegetative propagation.





Root

Artificial vegetative propagation

**With the interference of human,
if a plant grows then its known
as Artificial vegetative
propagation.**

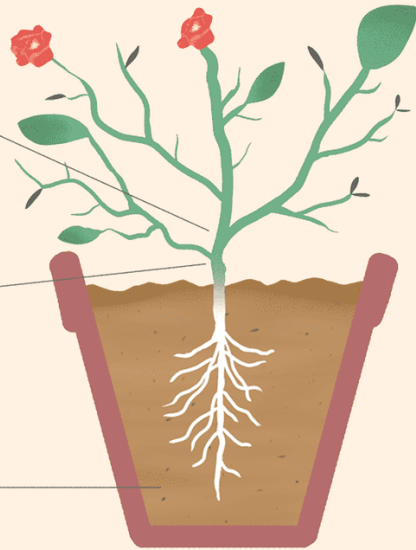
Cutting

How to Propagate Plants Using Stem Cuttings

Cut newer growth from plant below a growth node

Remove all leaves from bottom node

Use potting soil or soilless mix



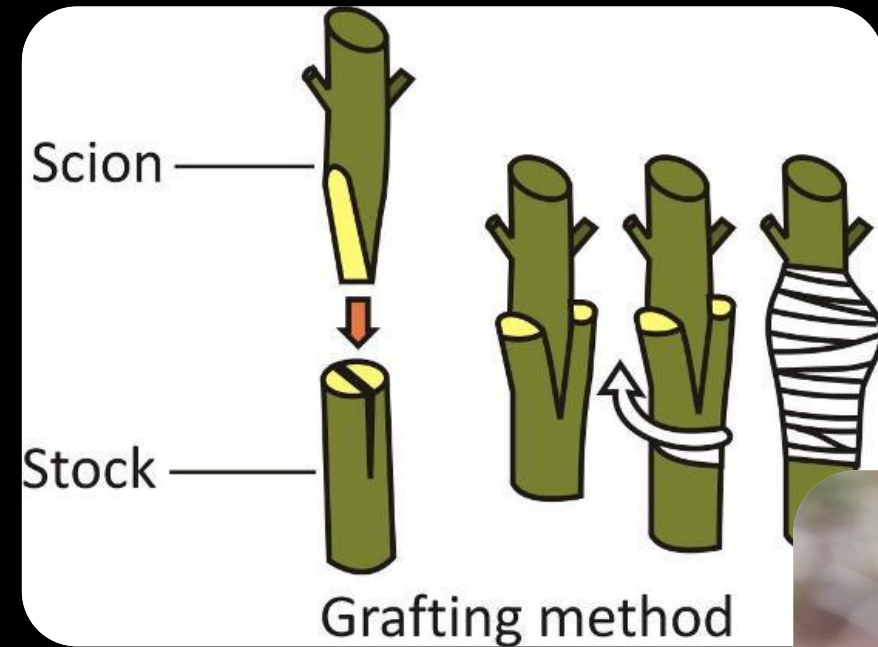
Dip cutting in a rooting hormone before planting



Place out of direct sunlight & keep moist until roots form

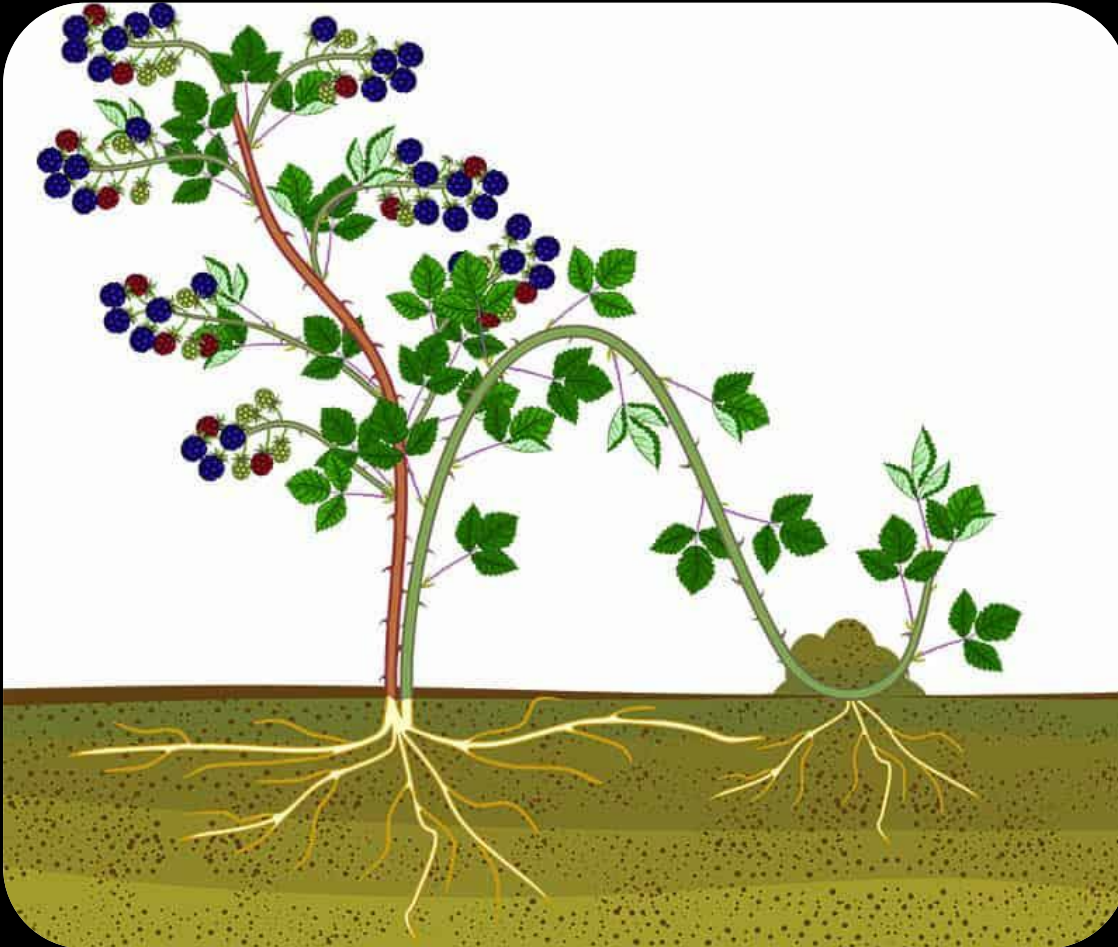
- Cutting is the method used for vegetative propagation where the vegetative part of the stem is cut and buried in the soil.
- The part which is used in cutting has the nodes which have axillary buds which help in propagation. For example, rose, sugarcane

Grafting



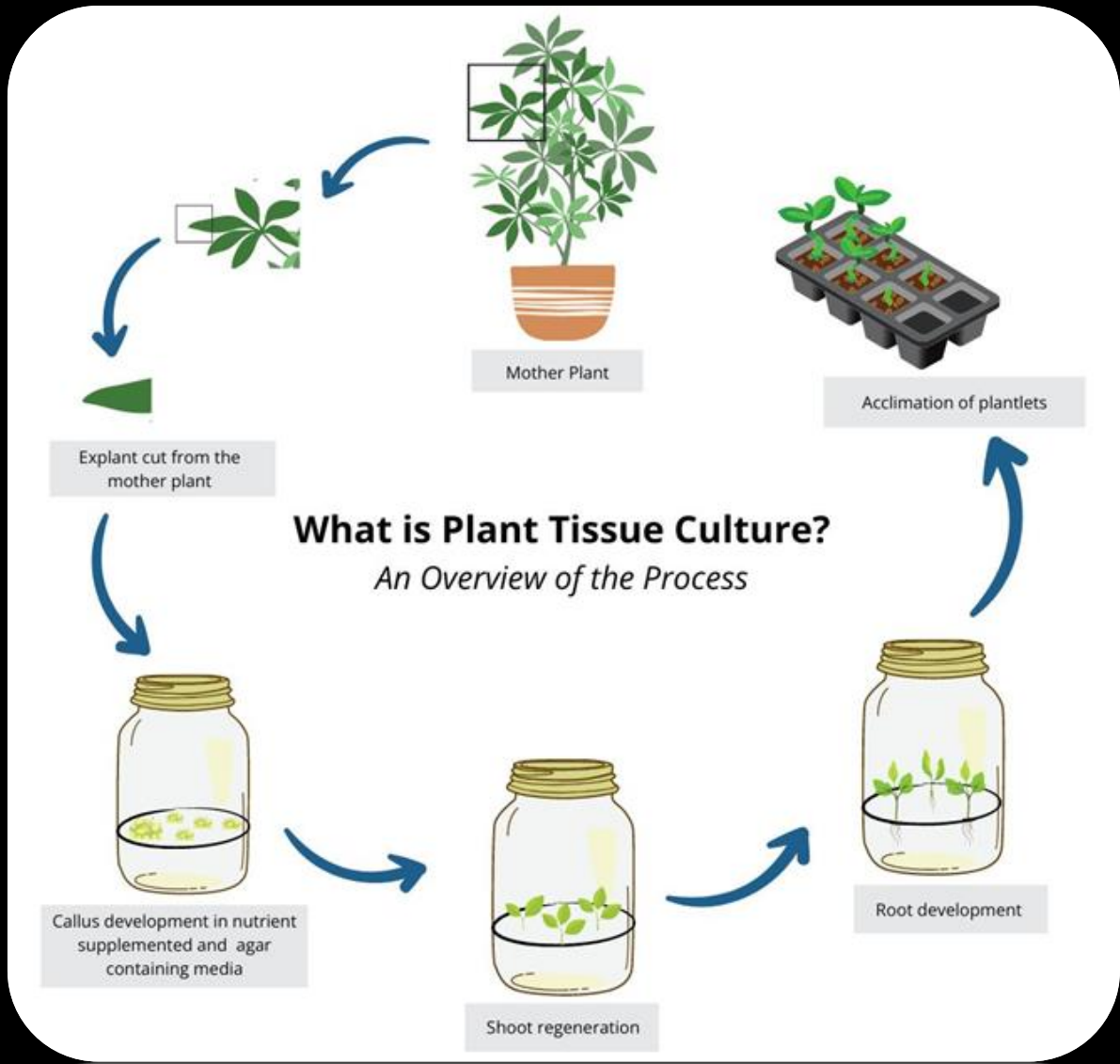
- Grafting is the act of placing a portion of one plant (bud or scion) into or on a stem, root, or branch of another (stock) in such a way that a union will be formed and the partners will continue to grow.
- **The part of the combination that provides the root is called the stock; the added piece is called the scion.**

Layering



- **Layering is a method of asexual propagation in which a stem is made to produce roots while still attached to the parent plant.**
- **The parent plant provides the new plant with water and nutrients while the roots are forming.**

Tissue Culture



- The technique of developing new plants from a cell or tissue in a nutrient medium under aseptic conditions.
- The cell or tissue is placed in a nutrient medium where it forms a mass of cells called callus.
- This callus is then transferred to another nutrient medium where it differentiates and forms a new plant.

Did You TRY it?

The part of human brain which controls muscular coordination is :

- (A) medulla
- (B) pons
- (C) cerebrum
- (D) cerebellum

A doctor advised a person to take an injection of insulin because :

- (A) his heart was beating slowly.
- (B) his blood pressure was low.
- (C) he was looking short in height.
- (D) his pancreas was not secreting the required hormone in proper amounts.

Assertion (A) : Chemical co-ordination is seen in both plants and animals.

Reason (R) : Plant hormones control directional growth, whereas in animals, growth is never seen in one direction only.

Did You TRY it?

Name the parts of the nervous system which are involved in the following activities :

2

- (i) Maintaining body posture
- (ii) Salivation
- (iii) Hunger
- (iv) Answering a question

(i) List three points of difference between nervous and hormonal mechanisms for control and coordination in animals.

(ii) How are auxins related with the bending of plant shoot towards unidirectional light ? Explain.

5

A field of yellow Black-eyed Susans (Rudbeckia hirta) flowers. The background is a soft-focus field of many similar flowers. In the foreground, one flower is in sharp focus, showing its bright yellow petals and dark brown center. A yellow banner with a black border is overlaid horizontally across the middle of the image, containing the text "Sexual Reproduction in Flowering Plants".

Sexual Reproduction in Flowering Plants

What happens in Sexual reproduction?

1. In sexual reproduction new individuals are formed by the fusion of male and female gametes.
2. This process of fusion of gametes is known as **Fertilization**.
3. Sexual reproduction involves combining genetic materials(DNA or RNA) from both parents which brings out variations.
4. Genetic material is carried by the gametes or germ cells and they are the only cells that have half the amount of genetic material because of the process of meiosis (reductional division)
5. When two such germ cells carrying half the amount of genetic material fuse, it re – establishes the amount of genetic material that the parents contain. (In simple language half plus half = 1, don't write this in exam)

Important Facts

What happens when gametes fuse?

- Well when the male and the female gametes fuse, it forms the zygote which is single celled. Later this zygote undergoes rapid cell division and differentiation to form an embryo.

Does the germ cells or gametes look the same?

- No, they appear different. Usually one among them reserve food and is non motile and the other germ cell will be motile eg. sperm of humans

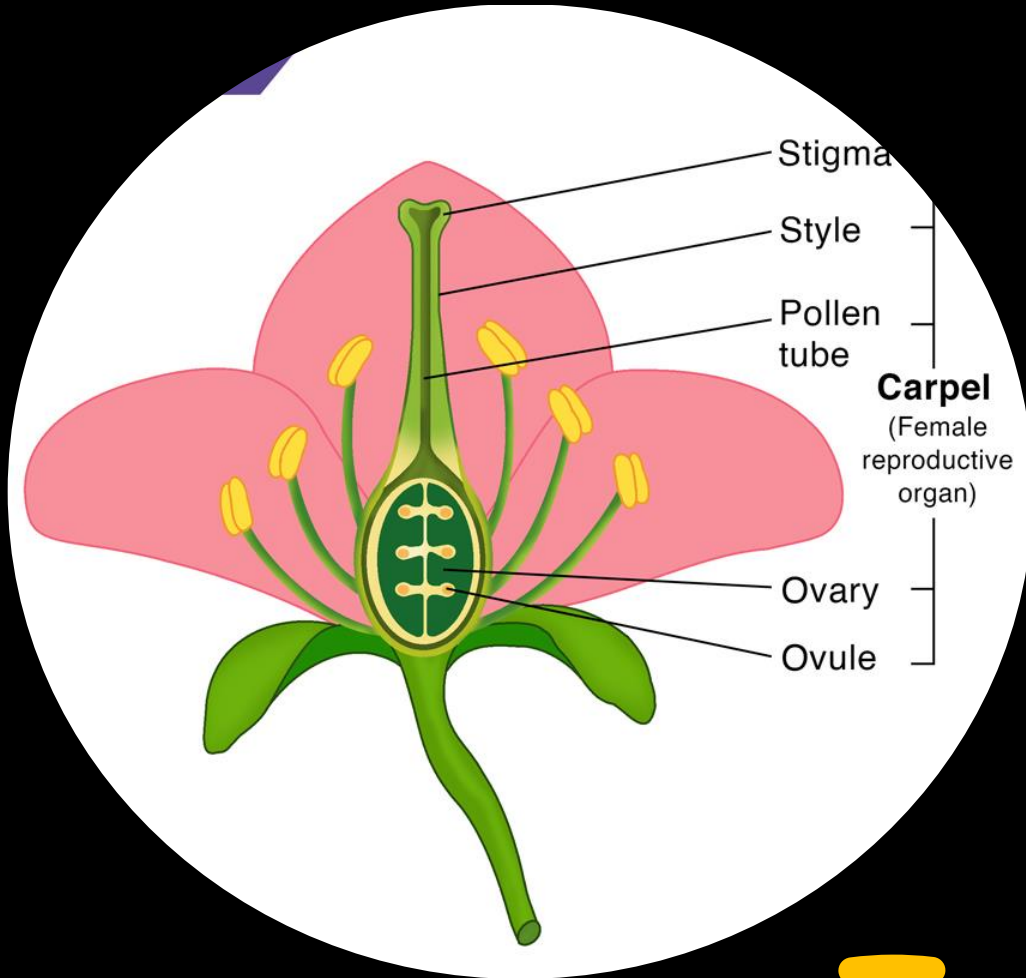
What if the gametes didn't half the no. of chromosomes or the genetic material?

- Then the resulting cell or the zygote will have double the amount of genetic material than that of the parent which will disrupt the genetic balance.

How sexual reproduction bring variations?

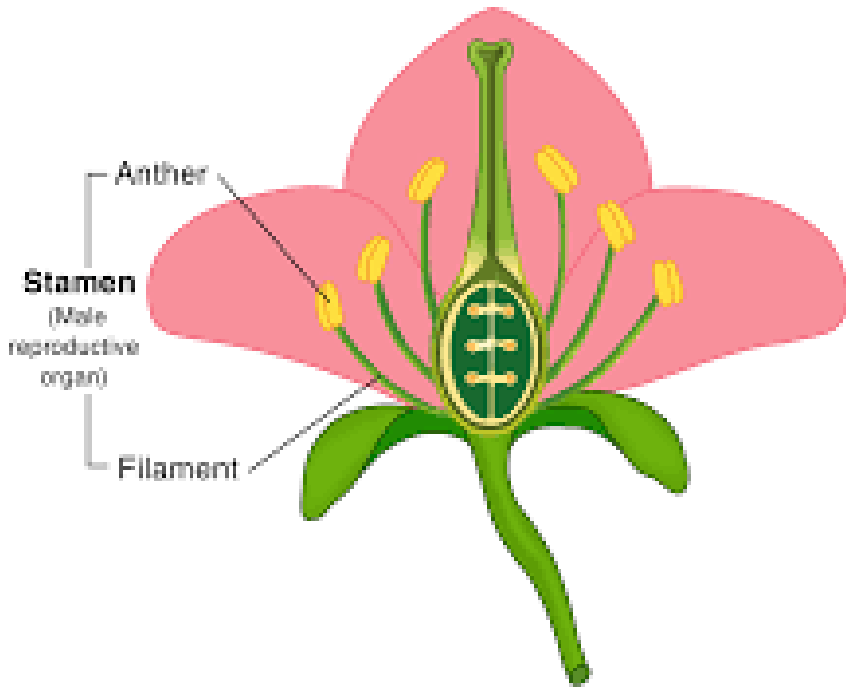
- It is already known that New variations are made while errors during DNA copying and also remember that the DNA which is being copied already has variations accumulated from previous generations. Now Combining variations from two or more individuals in sexual reproduction would thus create new combinations of variants.

What are the male and female reproductive parts of the plant?

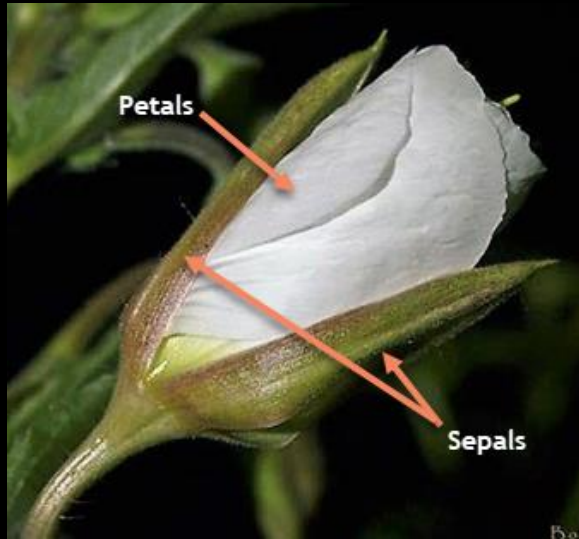


- This is **Carpel or Pistil**, the female reproductive organ of a flower. It is also known as **gynoecium**.
- The carpel consists of :
 1. **Stigma** : It is a sticky knob or head of the pistil that receives pollen grains and germinates pollen.
 2. **Style** : It is a stalk in the pistil that supports the stigma and connects it to the ovary. It aids in fertilization as it allows pollen to grow a pollen tube to the ovary.
 3. **Ovary** : It is the enlarged basal portion of the pistil that contains the ovules which carries the egg(female gamete)
- **Note:**
 - Ovules contains the female gamete, **OVULE ITSELF ISN'T the female gamete**
 - In future this ovary becomes the fruit and ovule inside it becomes the seed.

Stamen



- This is **Stamen**, the male reproductive organ of a flower. It is also known as **androecium**.
- The stamen consists of :
 1. Anther : It is bilobed upper part of the stamen that contains the pollen grains which in-turn consists the male gametes.
 2. Filament : It is a stalk like structure which attaches the anther to the flower.
- 3. Note:
 - Pollen grains contains the male gamete, **POLLEN GRAIN ITSELF ISN'T THE MALE GAMETE.**
 - In future these powdery pollen grains lands on the stigma of a flower



1. **Petals** : They are multicolored and are used to attract the pollinators. All the petals together are known as **Corolla**.
2. **Sepals** : It acts a protective layer when the flower is in the budding stage. The sepals together are known as **Calyx**.

Okay so now we know that a flower contains:

- Stamen
 - Pistil/Carpel
 - Calyx
 - Corolla
-
- Here when a flower contains either carpel or stamen and not both, then the flower is said to be **Unisexual**. Example - Papaya and Watermelon.
 - On the other hand if the flower contains both carpel and stamen, then it is said to be **Bisexual**. Example – Hibiscus and Mustard.

Pistil

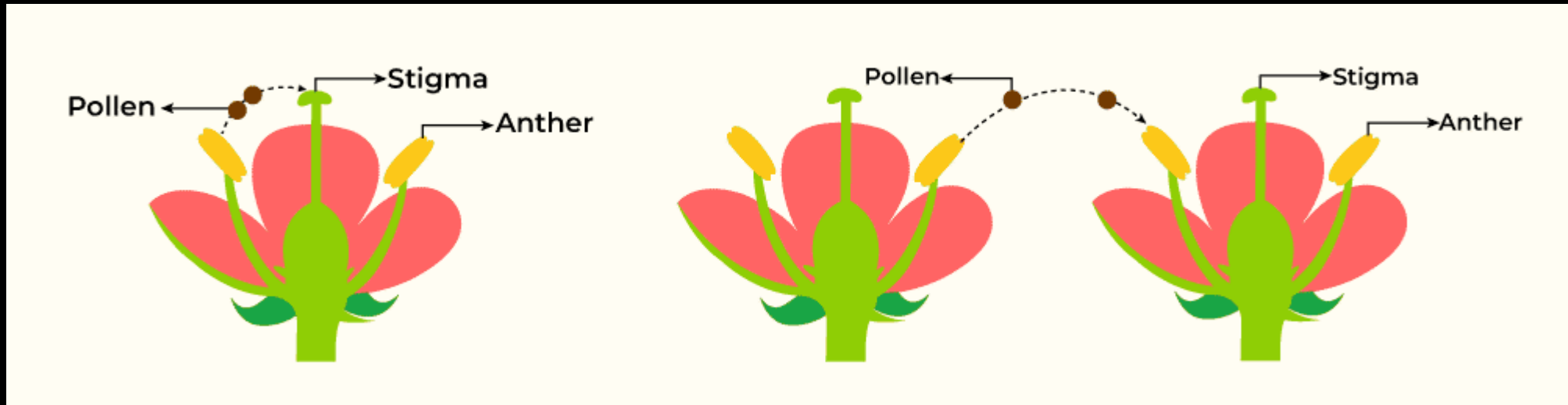
Stamen



What is Pollination?

Pollination

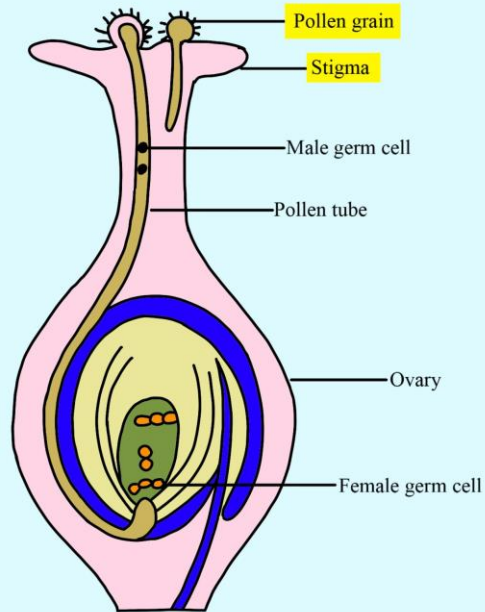
- The process of transfer and deposition of pollen grains from the anther to the stigma of the flower is called pollination.
 - There are two main types of pollination: **Self Pollination** and **Cross Pollination**.
- ✓ **Self Pollination:** It is the process of transfer of pollen grains from the anther to the stigma of either the same flower or another flower borne on the same plant.
- ✓ **Cross Pollination:** It is the process of transfer of the pollen grains from the anther of one flower to the stigma of another flower borne a different plant the same species. Cross pollination requires the aid of an external agency.



Pollination

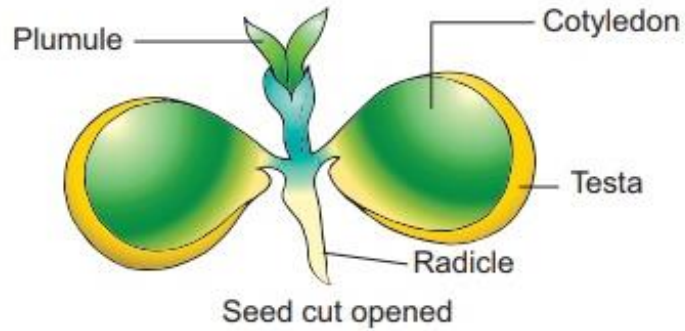
- The external agency may be **abiotic** (wind/water) or **biotic** (insects/birds/bats/snails and other animals).
- Cross pollination brings about **genetic recombinations** and produces **variations** in the offspring. It also increases the **adaptability** and makes the offspring better adjusted towards the changes in the environment.

What happens after pollination?



Pollen grain germination

- In plants, pollination is followed by fertilization.
- Once the pollen grain is deposited on a suitable stigma, it gives rise to a pollen tube which grows chemotropically through the style and reaches the ovary where ovules are located.
- One male gamete fuses with the egg. The fusion of the male gamete with the female gamete is called **fertilization** and it results in the formation of a **zygote**.
- The zygote divides repeatedly (by mitotic divisions) to form an embryo within the ovule. The other male gamete fuses with the two polar nuclei to form an **endosperm**. This process is called **triple fusion** and forms a triploid endosperm ($3n$) which nourishes the growing embryo.



- Inside embryo sac, as fertilization occurs twice, it is called **double-fertilization**.
- After fertilization, the ovule develops a tough coat and is gradually converted into a seed. The ovary grows rapidly and ripens to form a fruit. Meanwhile, the petals, sepals, stamens, style and stigma may shrivel and fall off.
- **Seed** : Seed contains the future plant or embryo which develops into a seedling under appropriate conditions. This process is known as **germination**. **Plumule** develops into the shoot whereas **radicle** develops into the root.

How is the process of pollination different from fertilisation ?

Answer:

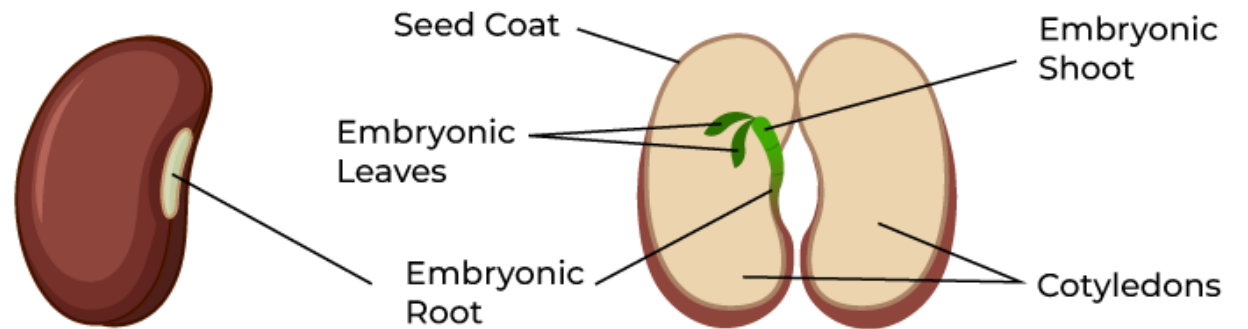
Pollination	Fertilisation
1. The transfer of pollen grains from the anther of a stamen to the stigma of a carpel is called pollination.	1. Fertilisation occurs when the male gamete present in pollen grain joins with the female gamete (or egg) present in ovule.
2. It takes place by various pollinating agents.	2. It takes place by natural or artificial means.

Monocotyledons



Dicotyledons

Common Bean (Dicot)

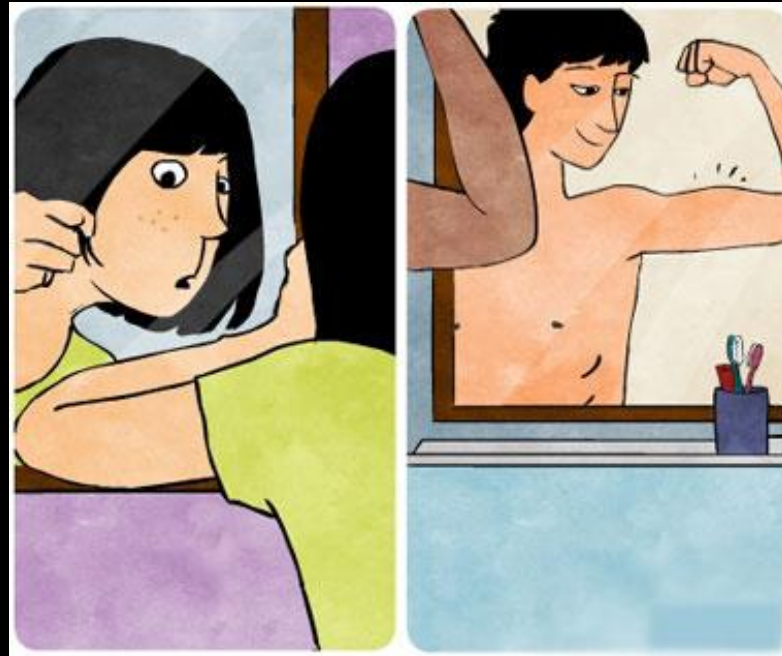


A photograph of two wolves in a snowy, wooded environment. The foreground wolf is a grey and tan wolf, looking towards the camera. The background wolf is black. A red banner with a black border is overlaid on the image, containing the text "Sexual Reproduction in Organisms".

Sexual Reproduction in Organisms

Is "Puberty and Adolescence" the same?

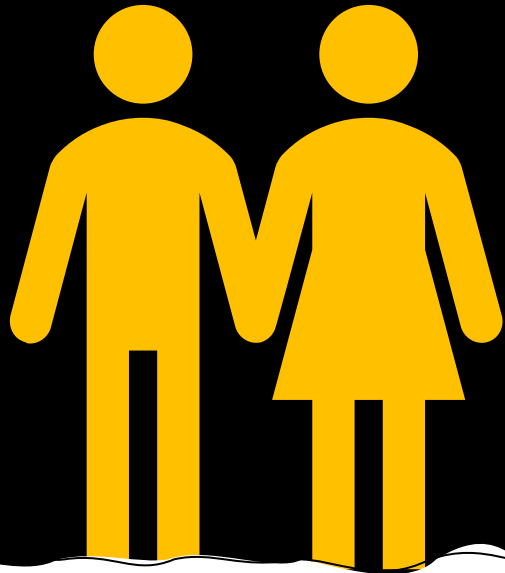
NOPE



Adolescence is the period of transition between childhood and adulthood

WHEREAS Puberty is

Puberty is a period that typically begins during late childhood or early adolescence, it is the period during which an organism attains sexual maturity.

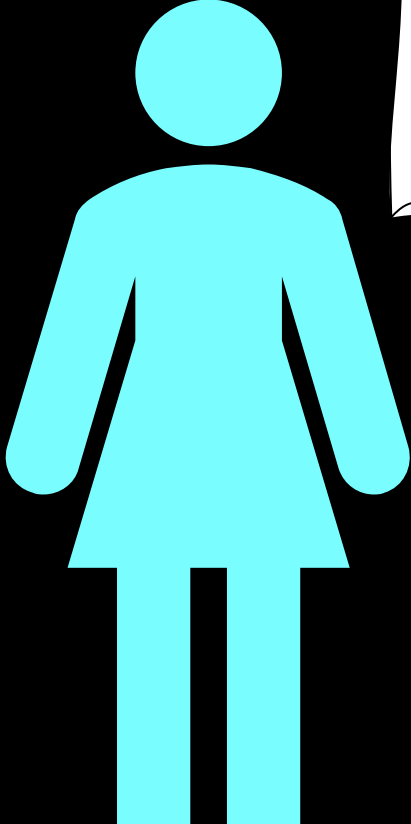


Secondary Sexual Characteristics

- Characters which are visible at the time of sexual maturation of the body.

Secondary Sexual Characters Common to both Male and Females

- Thick hair growth in the pubic region and armpits.
- Thin hair appears on legs and arms, as well as on the face.
- The skin frequently becomes oily and there might be occurrence of acne.



Secondary
Sexual
Characteristics

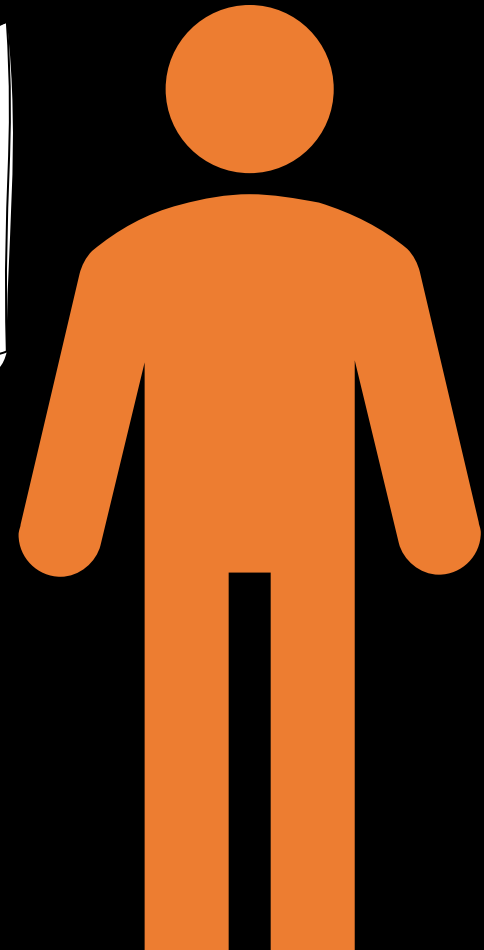
Secondary Sexual Characters in Female

- Breast size begins to increase.
- There is darkening of skin of nipples at the tips of breasts.
- Menstruation begins.
- Deposition of fat in various body parts like thighs and hips.
- High pitched voice.

Secondary Sexual Characters in Male

- Thick hair growth on the face and voice begins to crack and becomes deep.
- Body becomes muscular.
- Enlargement of testes, scrotum and penis.

Secondary
Sexual
Characteristics



Phases of Sexual Reproduction

Prezygotic/gametic phase

Gamete
formation

- It involves sperm formation (spermatogenesis) in males and ovum formation (oogenesis) in females.

Zygotic phase

oocyte

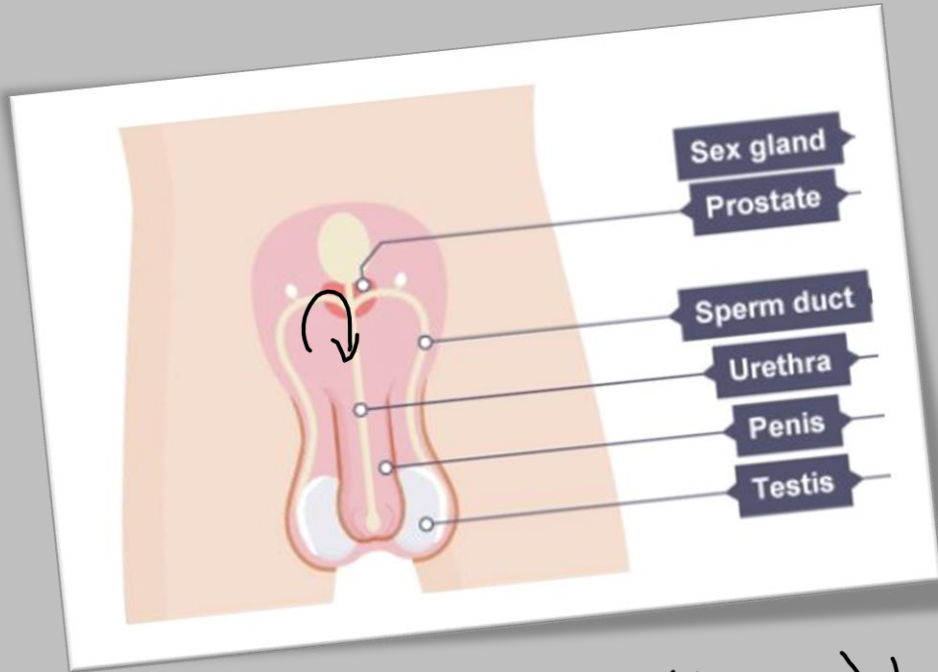
- It involves fusion of gametes (sperm and ovum) which results in the formation of zygote. This process is called fertilization/syngamy.

Postzygotic phase

- It includes events of growth and development of the embryo and foetus from a single cell called zygote.

Male reproductive system

It consists of a pair of testis (testes) that produce the male germ cells or sperms and several secondary sex organs like a duct system, accessory glands and a mating organ.



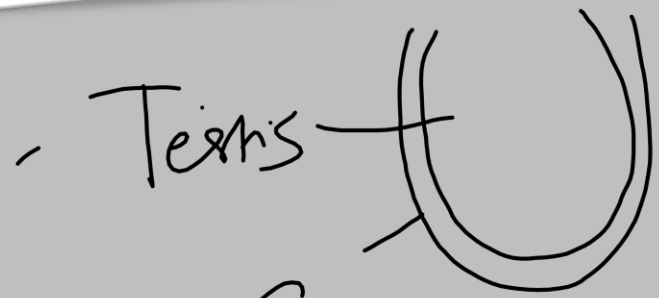
Testes

1^o sex organ → Sperm (malygamiti)
→ Male hormones
↓
Androgens

- These are the **primary sex organs** which are ovoid in shape and are responsible for the formation of sperms and male sex hormone testosterone.

- The testes are located outside the abdominal cavity. They are actually found hanging in a pouch-like structure called **scrotum**.

- The **scrotum** provides an optimal temperature for the formation of sperms, which is 2.5°C lower than the normal temperature of the body.

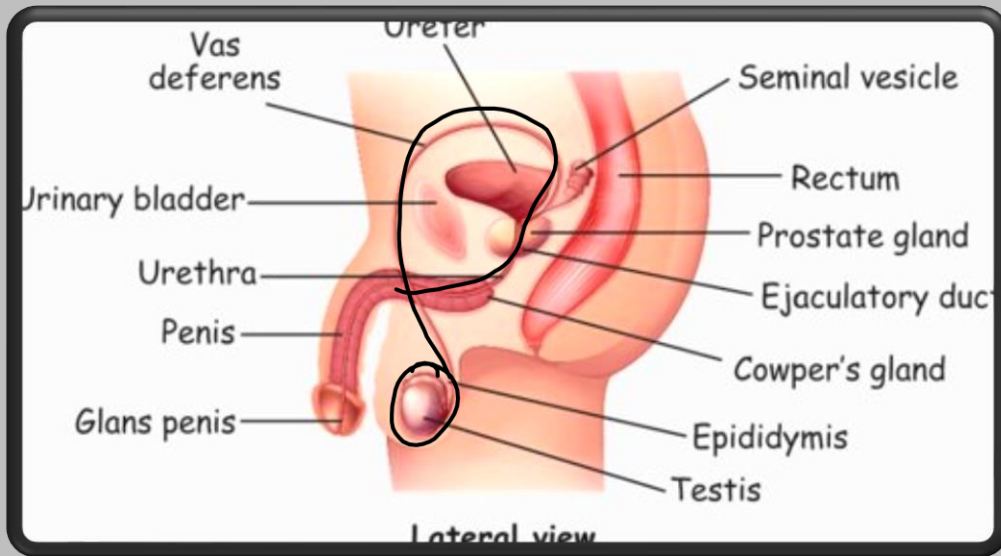


Scrotum

2-2.5°C Lower

Secondary sex organs

Help in reproduction but they do not produce gametes or sex hormones.



- Duct system, made up of epididymis and vas deferens.
- **Accessory glands**, include a pair of seminal vesicles, prostate gland and a pair of cowper's gland.
- **Mating organ** : Penis

Female Reproductive System

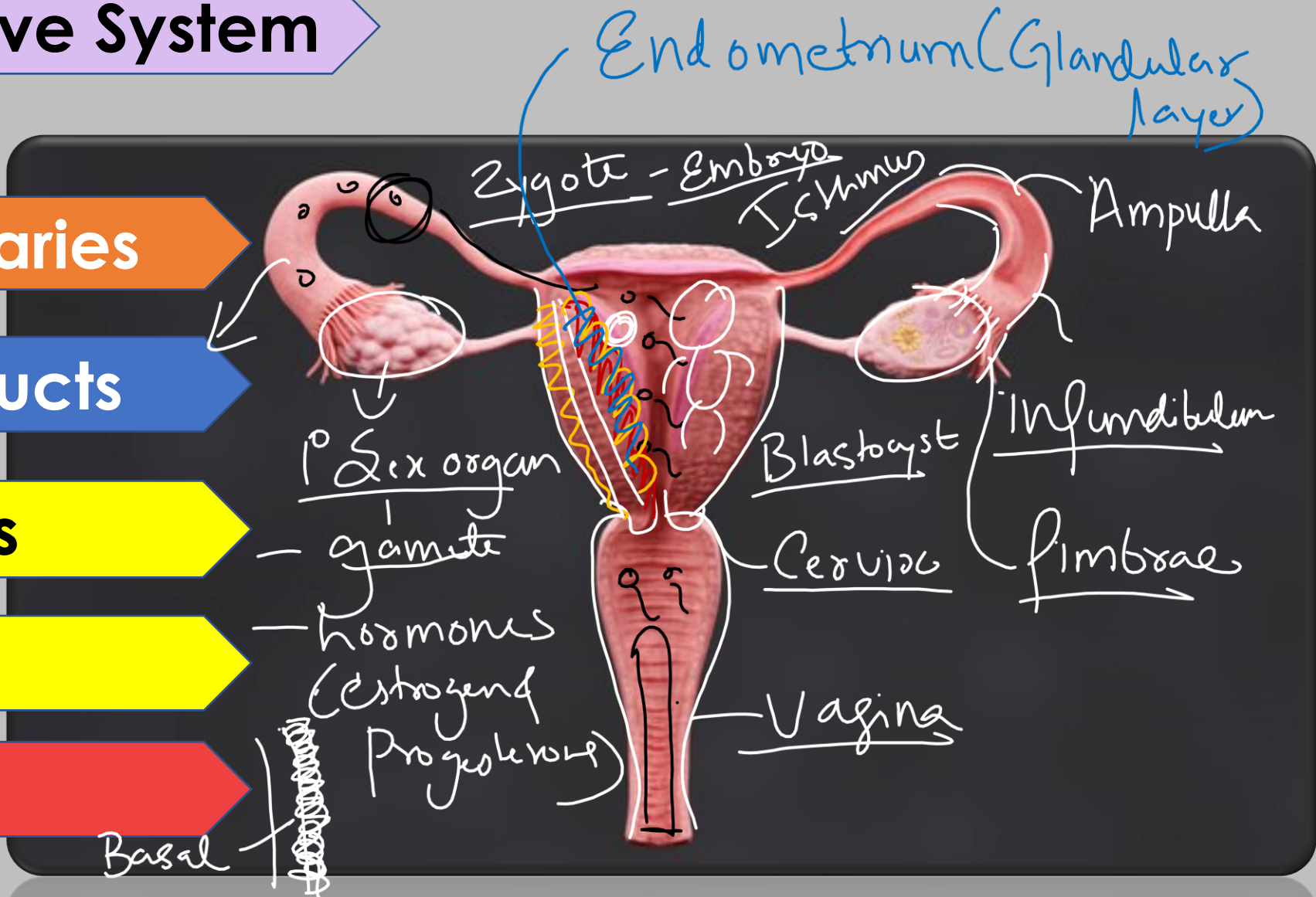
Ovaries

Oviducts

Uterus

Cervix

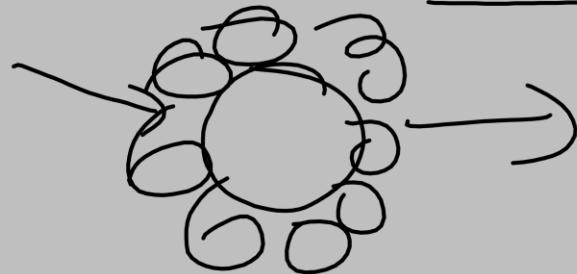
Vagina



Female Reproductive System

Ovaries

- Ovaries are a pair of almond shaped structures located in the lower part of the abdominal cavity. When a girl child is born, her ovaries contain thousands of immature eggs or follicles.

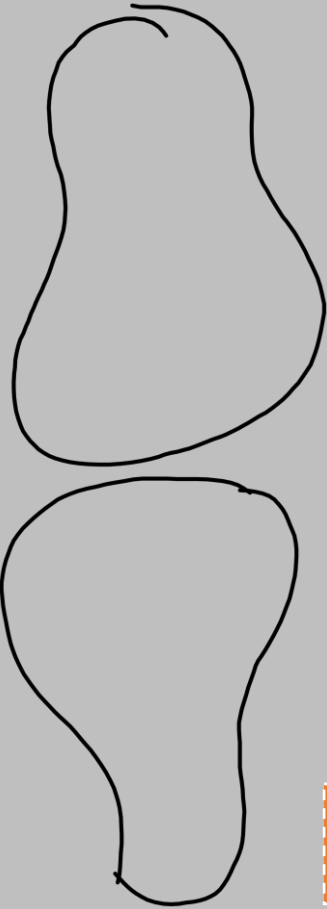


Secondary sex organs

The accessory organs in human female reproductive system are

- Oviduct or fallopian tube
- Uterus
- Cervix
- Vagina

Fallopian tube : The fallopian tube or oviducts, are a pair of thin tubes that lead from the ovaries to the uterus. The **fertilization of ovum** by the sperm also occurs inside the fallopian tube.

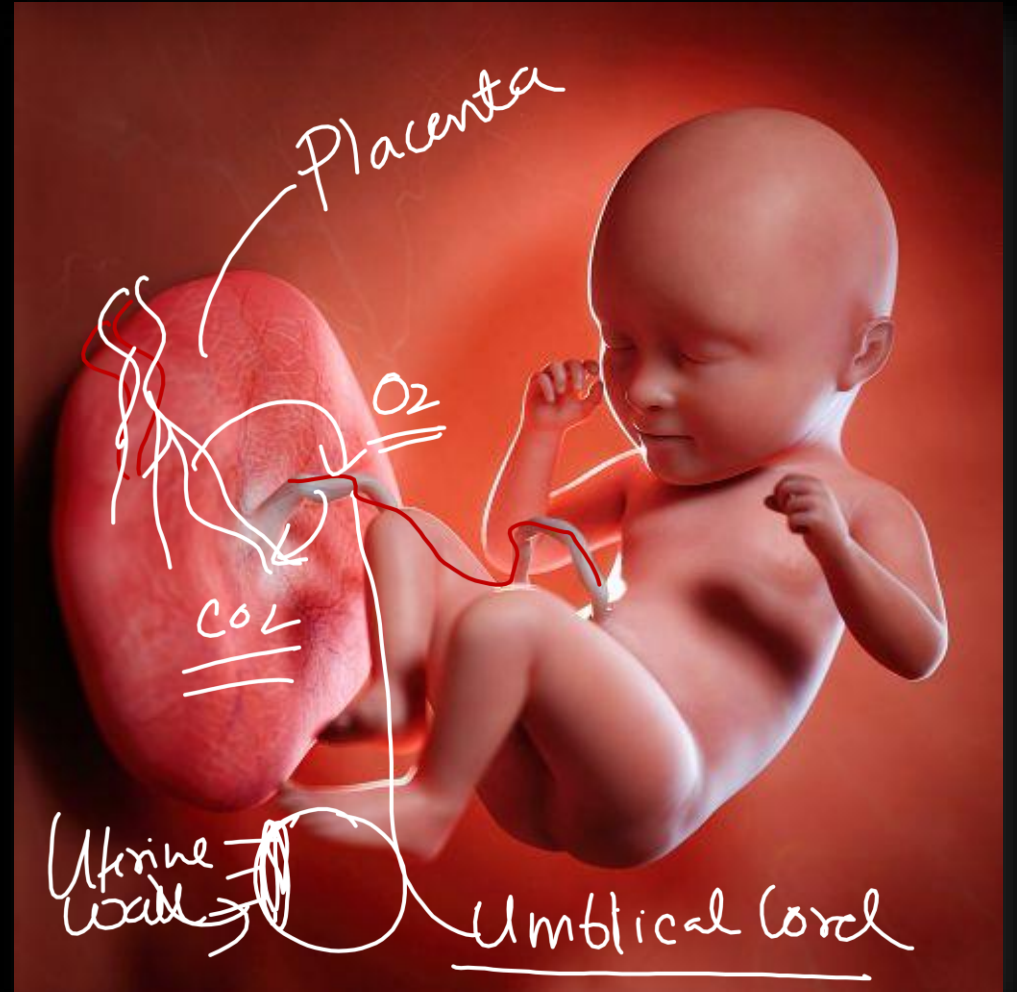


Uterus : The uterus (womb) is a hollow, pear-shaped, elastic, muscular organ which is specialized to retain and nourish the foetus during pregnancy.

Vagina : Vagina is a muscular distensible tube leading to the outside of the body through an opening

The uterus opens into the vagina through the cervix.

What if fertilization takes place?



Post Fertilization Events

- In human beings, fertilization is internal.

Fertilization is marked by the absence of menstruation in females.

Mitosis



- The fertilised egg (zygote) starts dividing and form a ball of cells or embryo. The embryo is implanted in the lining of the uterus where they continue to grow and develop organs to become foetus.
- After implantation, a special tissue called placenta develops between uterine wall and the embryo (foetus).
 - al chord

- The embryo gets nourishment from the mother's blood with the help of this special disc-shaped tissue which embeds in the uterine wall.
- The developing embryo will also generate waste substances which can be removed by transferring them into the mother's blood through the placenta.

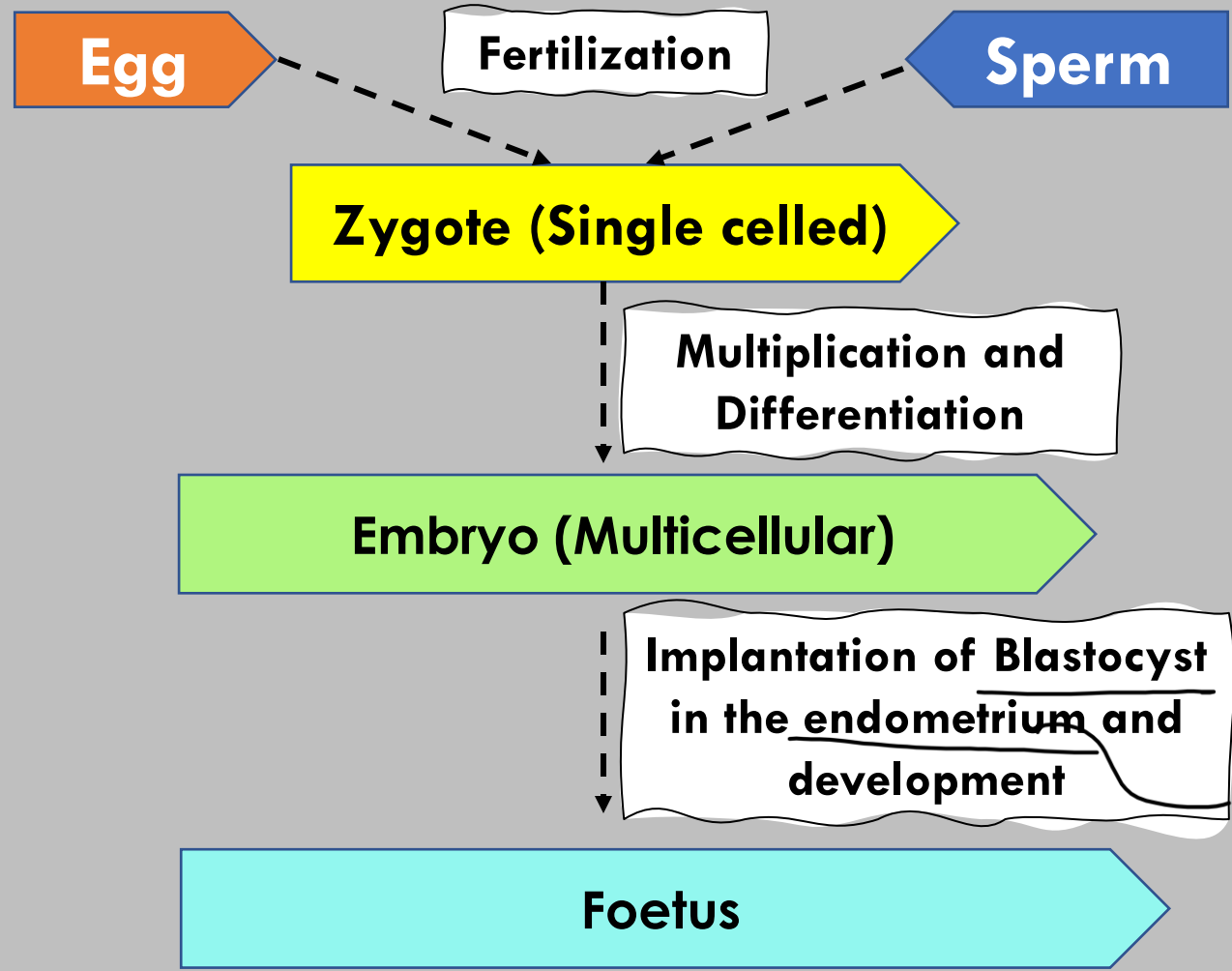
**What if fertilization does not
take place?**

What Happens when the Egg is not Fertilized?

- If the egg is not fertilised, the overgrown lining of the uterus breaks down and comes out along with the unfertilized egg through the vagina with blood and mucus, as it is not needed any longer.

This cycle occurs every month and is known as menstruation. It lasts for about two to eight days (mostly five days).





Glandular layer

What are STD's?

The diseases which spread from an infected person to a healthy person by sexual contact are called "Sexually Transmitted Diseases" ✓

↳ Genital fluid

What is Contraception?

The methods or devices of birth control which deliberately prevent fertilization are referred to as a contraception.

Barrier Methods



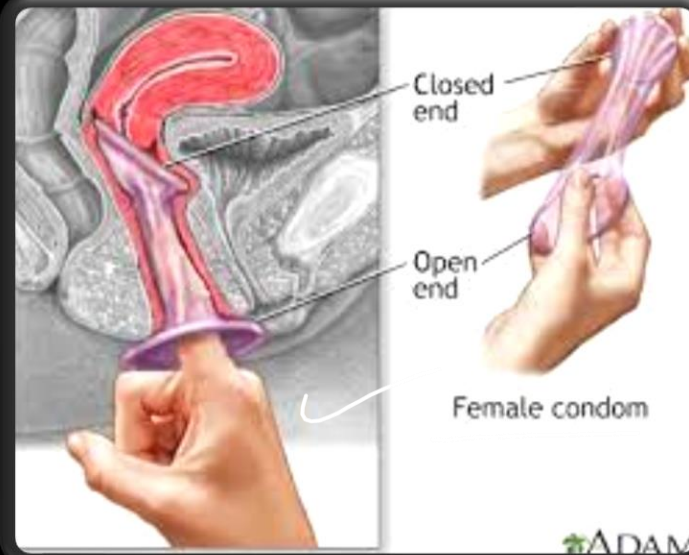
Only method that prevent STD's

These are physical devices to prevent the entry of sperm in the female genital tract during copulation.

They also protect against STD's

Barrier Methods

Male Condom



DIAPHRAGM



ADAM

THE NISLID

ADAM

Intrauterine Contraceptive device(IUCD)

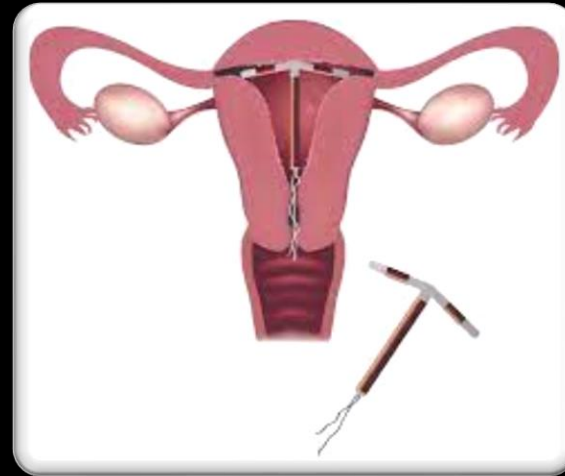
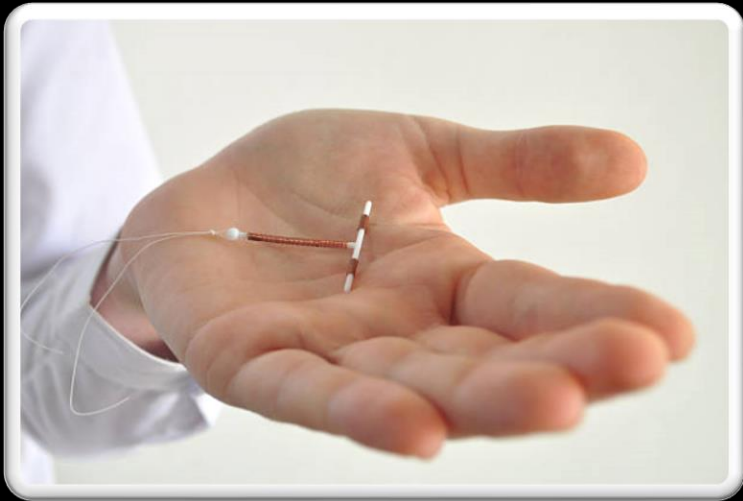
IUD IUD

These devices are inserted by doctors or expert nurses in the uterus through vagina Eg. Copper T

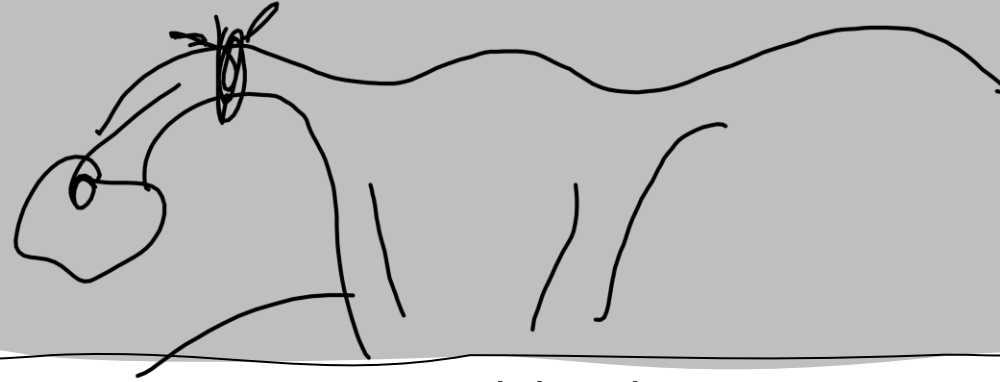
IUDs increase phagocytosis of sperms within the uterus and the Cu ions released suppress sperm motility and the fertilizing capacity of sperms. The hormone releasing IUDs, in addition, make the uterus unsuitable for (implantation) and the cervix hostile to the sperms



Intrauterine Contraceptive device(IUCD)



Surgical Methods

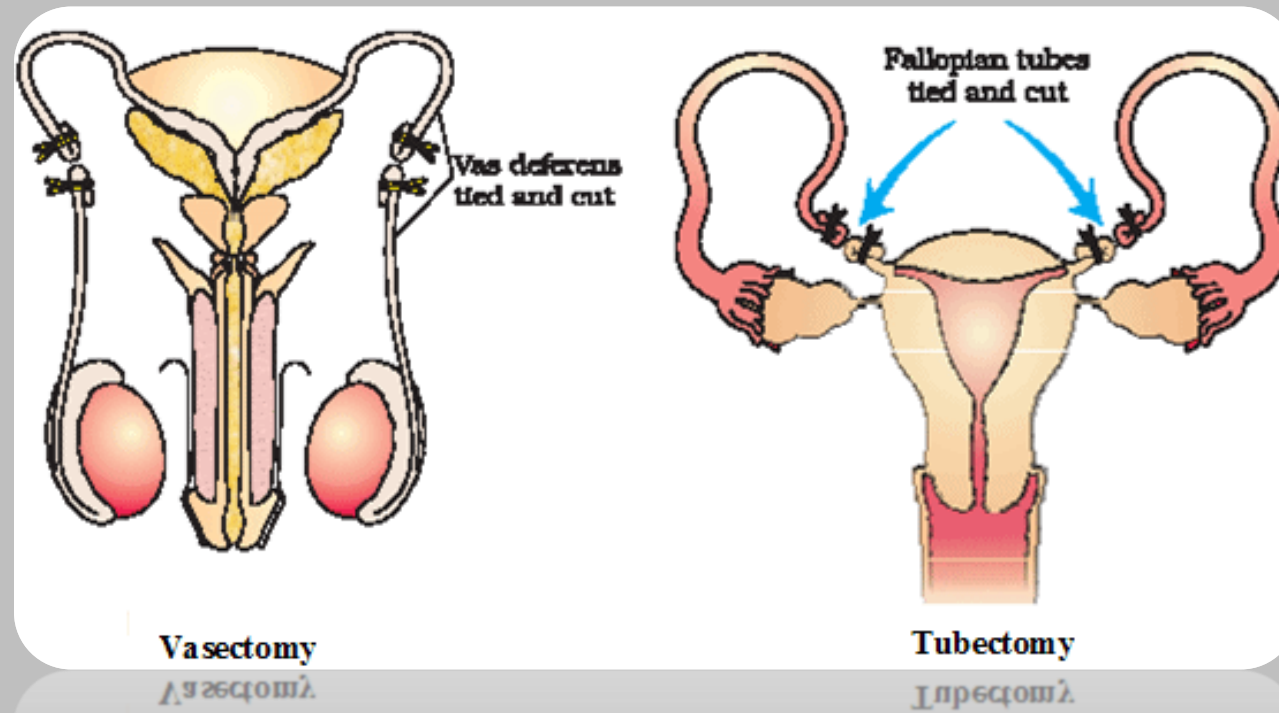


Surgical intervention blocks gamete transport and thereby prevent conception.

- Surgical intervention blocks gamete transport and thereby prevent conception.
- Sterilisation/Surgical Intervention procedure in the male is called 'vasectomy' and that in the female, 'tubectomy'.
fallopian tube female, 'tubectomy' Vas deferens
- In vasectomy, a small part of the vas deferens is removed or tied up through a small incision on the scrotum whereas in tubectomy, a small part of the fallopian tube is removed or tied up through a small incision in the abdomen or through vagina.

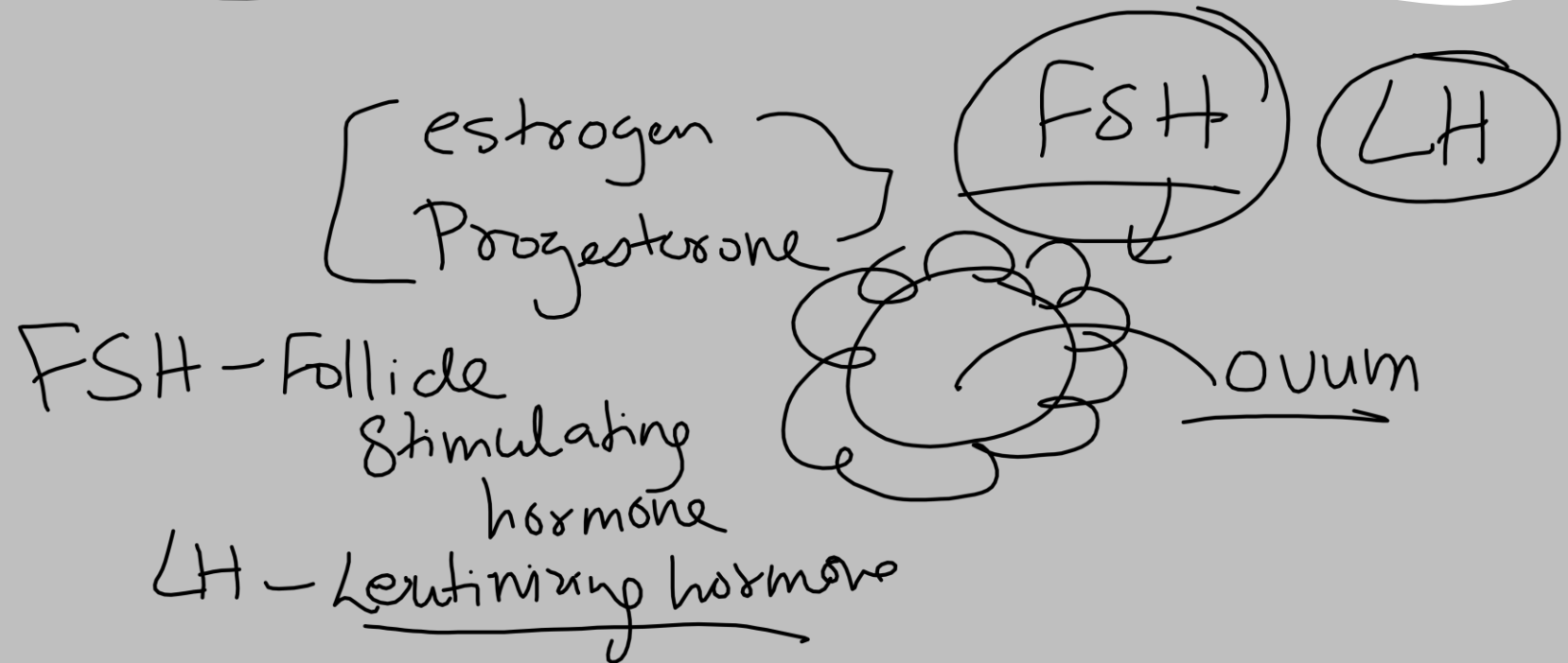


Surgical Methods



Oral pills ✓

Oral administration of small doses of either progestogens or progestogen-estrogen combinations is another contraceptive method used by the females which prevent development of egg and ovulation by inhibiting FSH.



Natural Methods

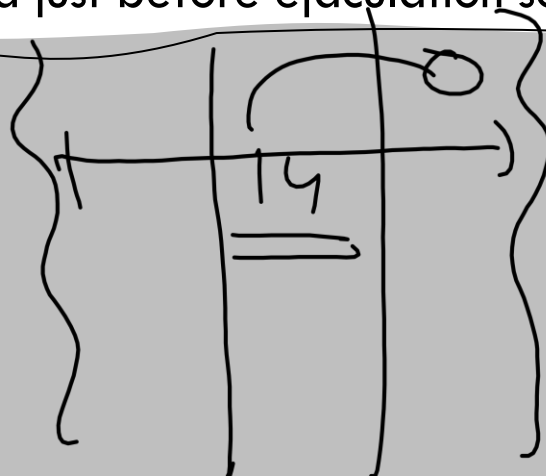
Natural methods work on the principle of avoiding chances of ovum and sperms meeting.

Periodic abstinence is one such method in which the couples avoid or abstain from coitus from day 10 to 17 of the menstrual cycle when ovulation could be expected

Withdrawal or coitus interruptus is another method in which the male partner withdraws his penis from the vagina just before ejaculation so as to avoid insemination

28

|



|

29

A woman is using a copper-T. Will it help in protecting her from sexually transmitted diseases ?

Answer:

Copper-T is a contraceptive method which prevents implantation of the zygote inside the uterus. It cannot prevent a woman from sexually transmitted diseases. These diseases are transmitted by contact which cannot be prevented by copper-T.

Select from the following the part/parts of a flower which attracts/ attract insects for pollination :

- (A) Petals only (B) Sepals only
(C) Anther and Stigma (D) Petals and Sepals

(a) What is vegetative propagation ? List its two advantages. 2

OR

(b) List two distinguishing features between sexual reproduction and asexual reproduction. 2

(i) Name the organ that produces sperms as well as secretes hormone in human male reproductive system. Name the hormone it secretes and write its function.

(ii) Name the part of the human female reproductive system where (i) fertilisation occurs and (ii) implantation of zygote takes place.

(iii) Explain how the embryo gets its nourishment inside the mother's body.

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