

UPDAAN



2025

✓ How Do organisms ✓ Reproduce ?

Biology

Lecture - 02

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Topics to be covered

1 ✓ Asexual vs sexual Reproduction

2 Types of Asexual Reproduction

3 ✓ MCQ practice and Homework

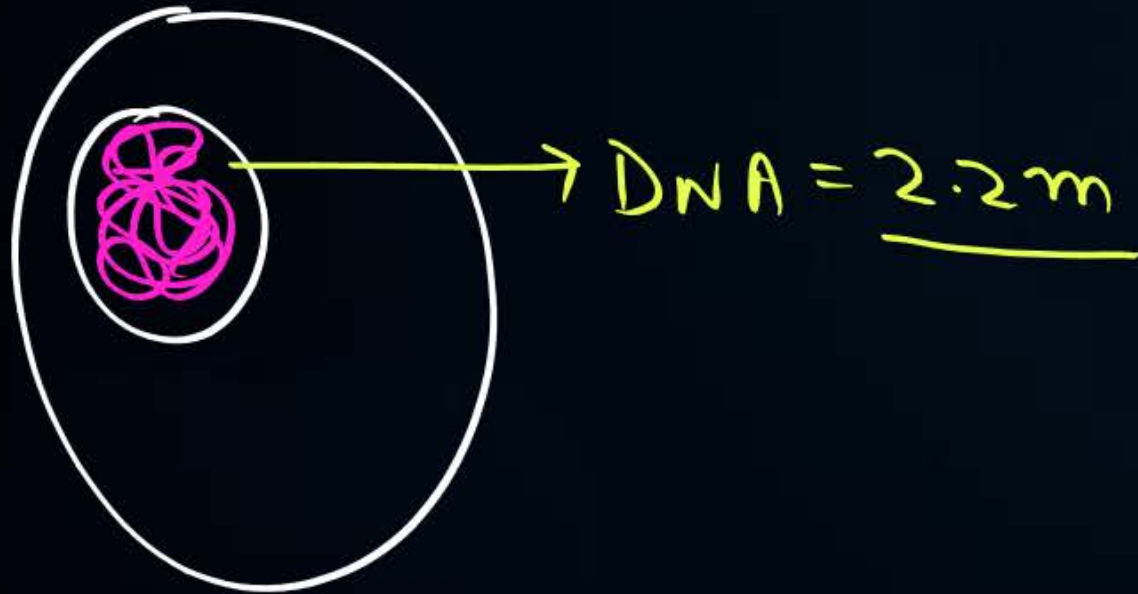




Question of the Day

Genes in a human DNA :

→ 20,000 - 22,000



Which part of the nephron shows selective reabsorption of glucose?

+
Amino Acid
+
Water

- A Glomerulus
- B Bowman's capsule
- C Ureter
- ☒ D Tubule



Choose incorrect statement ^(F)

- A Variations helps to adapt in changing environment (T)
- B Process of ^(DNA Copying) replication is error (T)
- C ^{DNA} ~~RNA~~ is the genetic material (F)
- D Chromosomes are only visible during cell division (T)



HOW DO ORGANISM REPRODUCE?

notes



ASEXUAL REPRODUCTION

- ✓ • Single parent is involved
- ✓ • No Gamete formation
- ✓ • No Fertilisation
- ✓ • Offsprings formed are genetically similar

↓
DNA

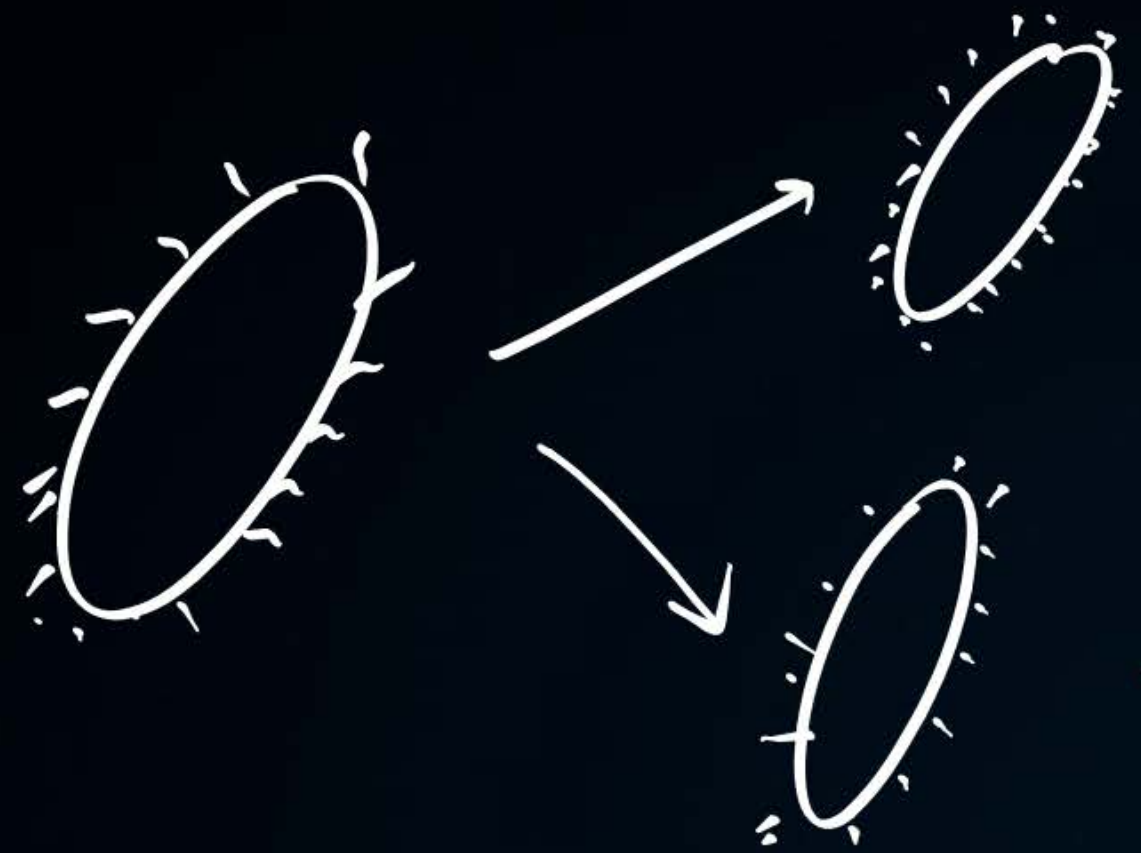
SEXUAL REPRODUCTION

✓ Male Parent

✓ Female parent

Fusion of male & female gamete

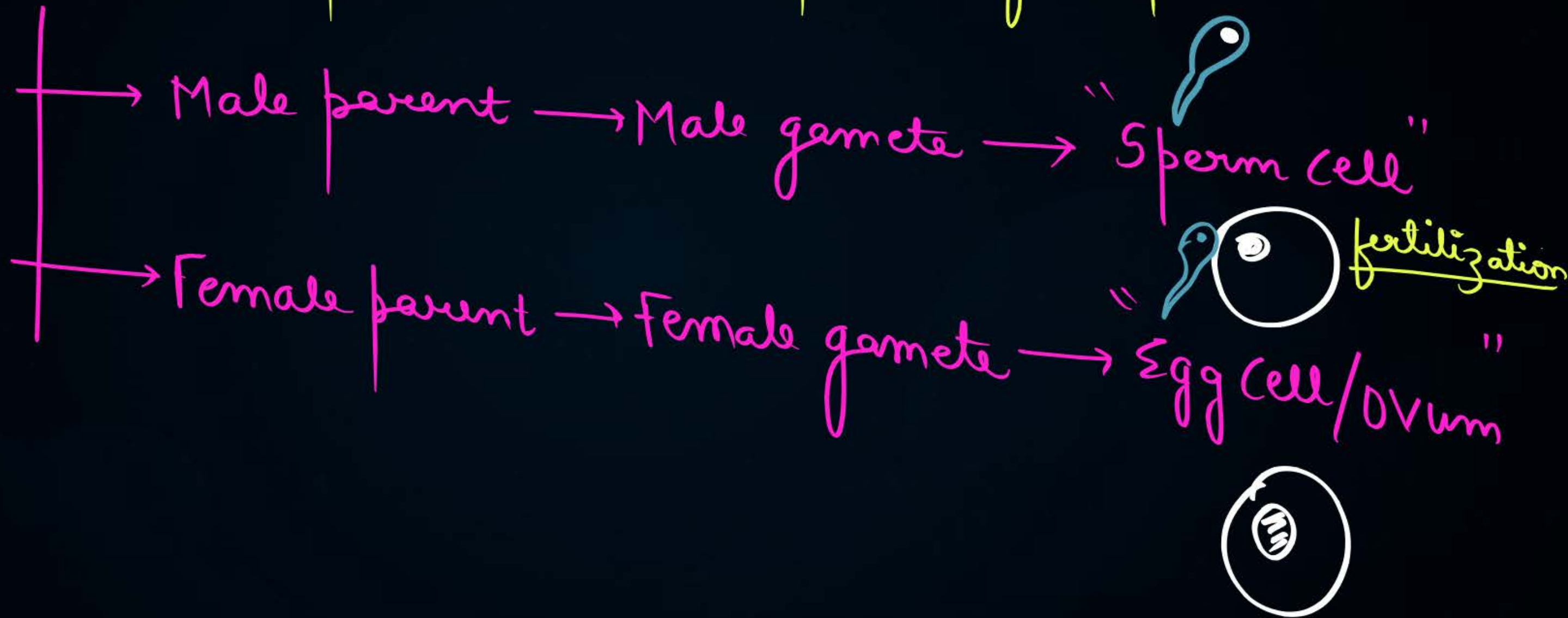
- Two parents are involved
- Gamete formation occurs
- Fertilisation occurs
- Offsprings formed are genetically dissimilar (DNA)



Genetically similar offsprings
(DNA)

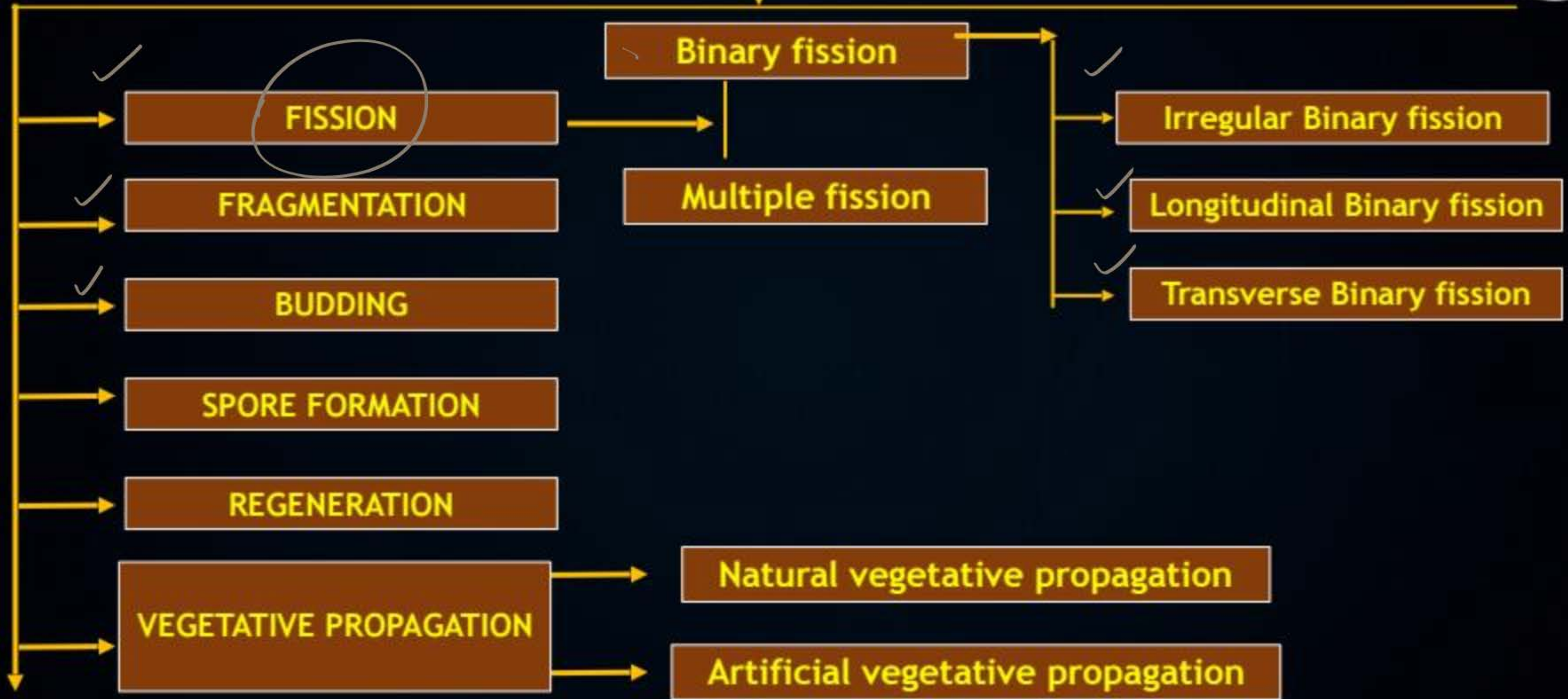
Sexual Reproduction ✓

Gametes are Specialized Cells responsible for reproduction



TYPES OF ASEYUAL REPRODUCTION

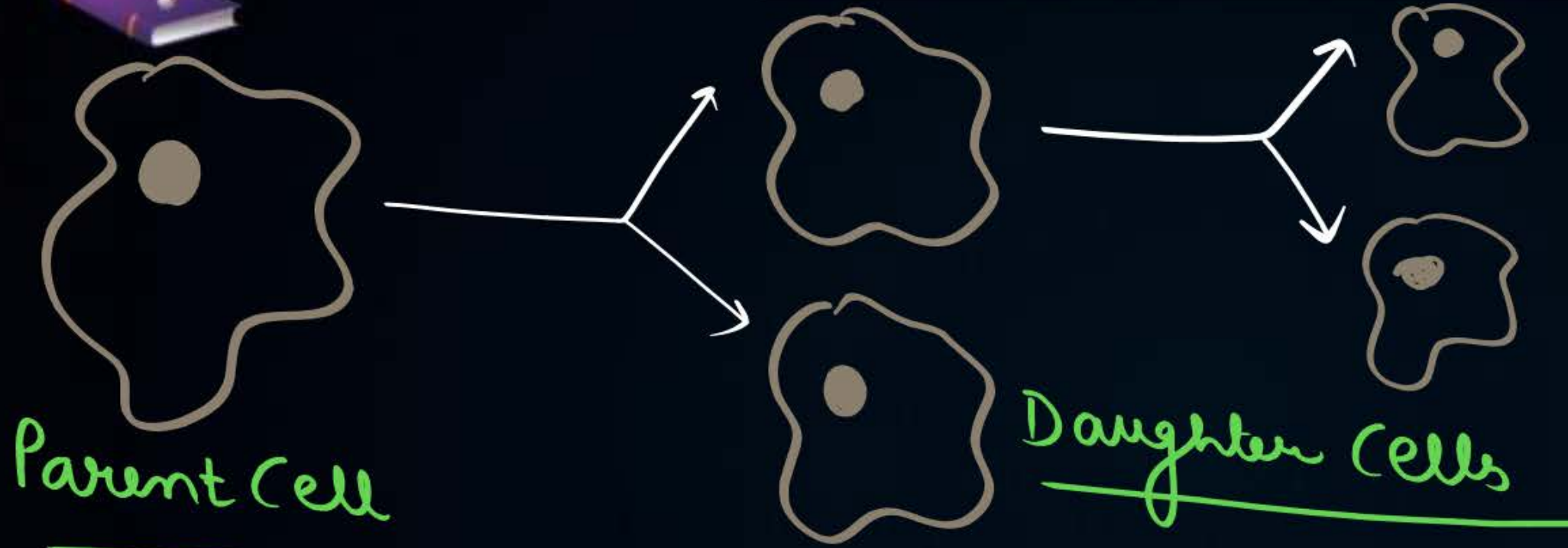
notes





Fission

Fission is the division or splitting of a unicellular organism into two or more cells.



Observed in : Lower organisms

(1) Bacteria	(3) Euglena
(2) Amoeba	(4) Leishmania

Types of Fission

Two
Binary fission



Two daughter cells are produced.

Many
Multiple fission



Many daughter cells are produced

Types of Fission

Two
Binary fission

- + ① Irregular
- + ② Longitudinal
- + ③ Transverse

Many
Multiple fission



Types of Binary Fission

#Ch



Irregular
Binary fission



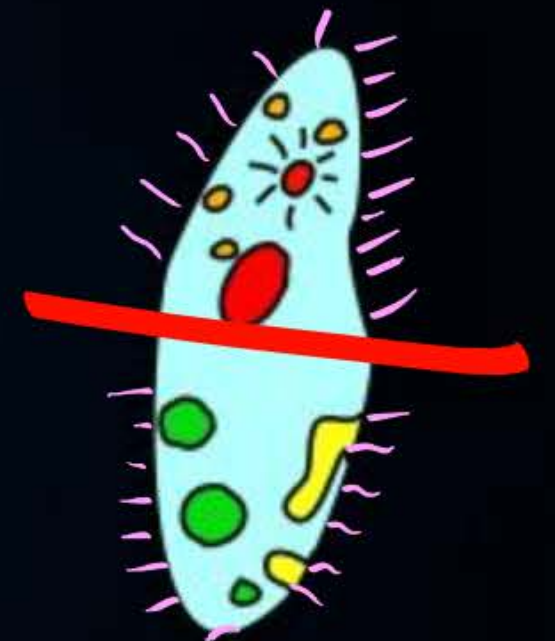
Amoeba [No fixed
plane]

Longitudinal
Binary fission



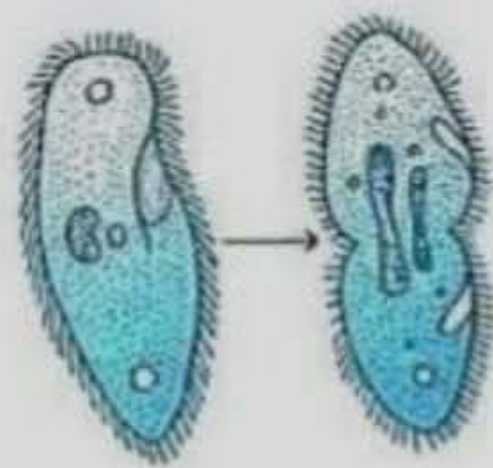
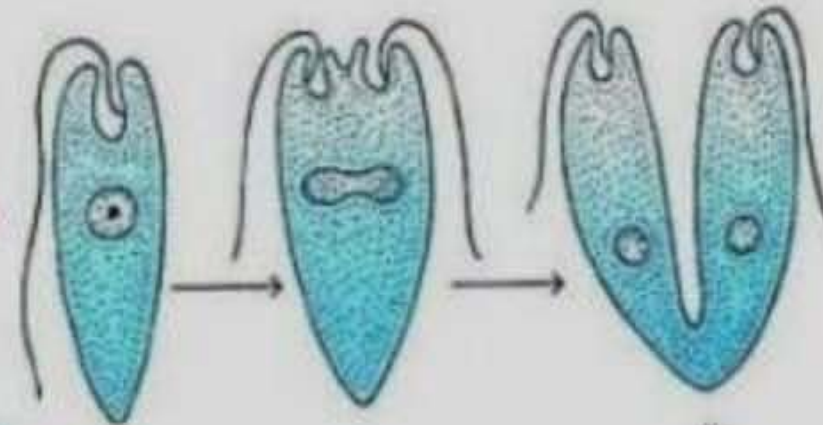
Leishmania [Longitudinal
plane]

Transverse
Binary fission



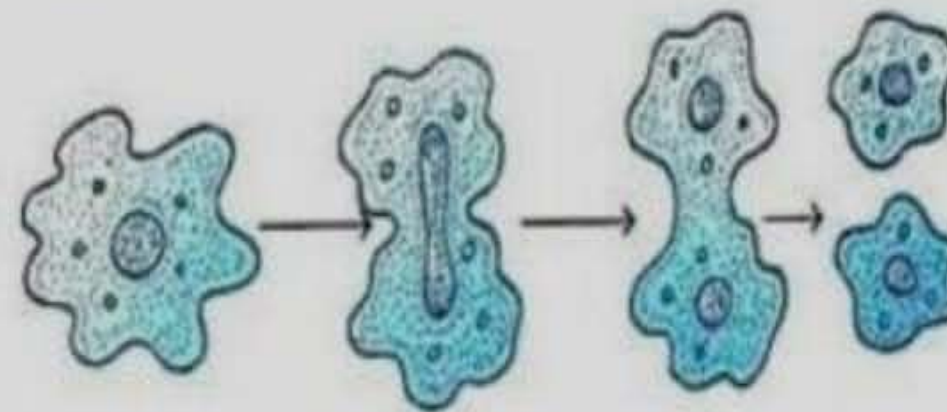
Paramecium
[Transverse
plane]

Longitudinal binary fission



Transverse binary fission

Irregular binary fission





Bacteria

Prokaryotic organisms
→ Nucleus absent



Protozoa

[Amoeba, Leishmania, Plasmodium etc]
Eukaryotic organism
→ Nucleus present.



Irregular Binary fission In Amoeba

AMOEBA

- # Uni-cellular
- # Eukaryotic organism {Nucleus present}
- # Protozoa
- # Aquatic organism {generally fresh water}



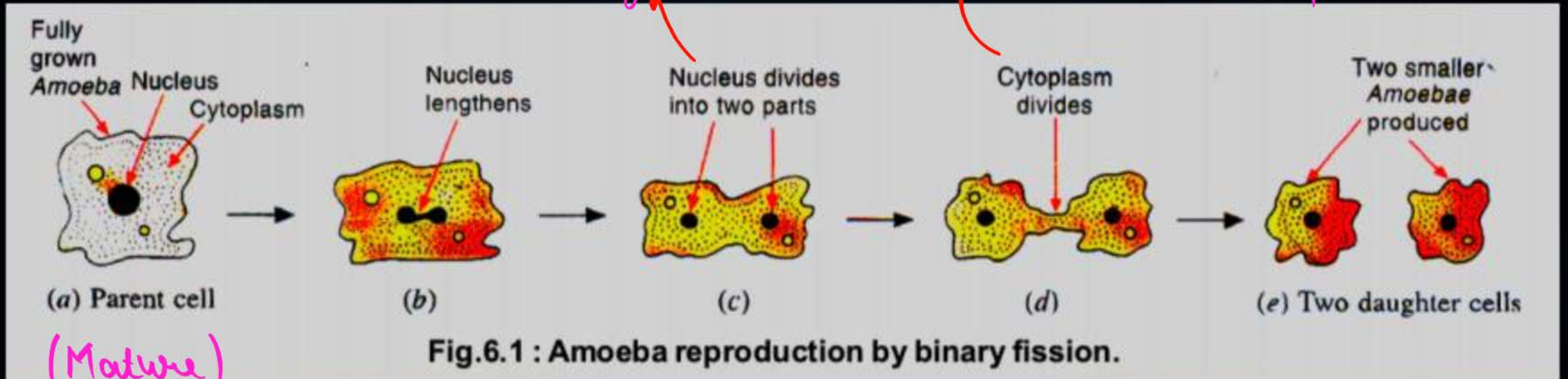
Karyon = Nucleus

Irregular Binary fission In Amoeba



• Karyokinesis
→ Division of Nucleus

• Cytokinesis
→ Division of Cytoplasm



(Mature)

- + ① DNA Replication (DNA Copying)
- + ② Duplication of cell organelles



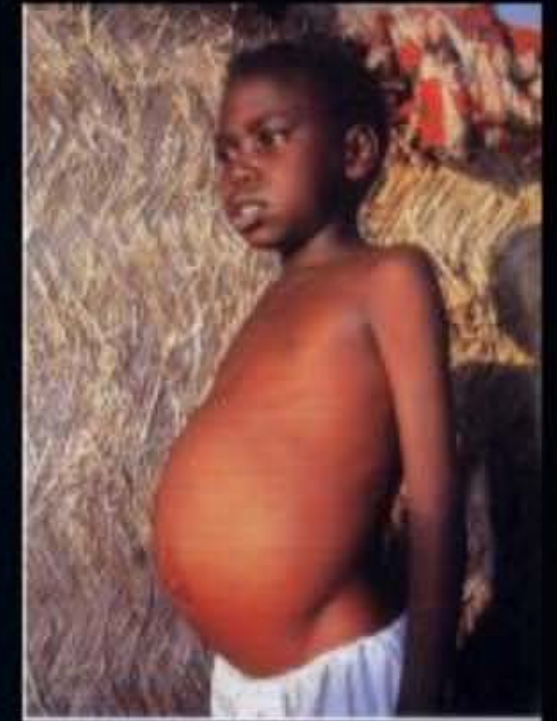
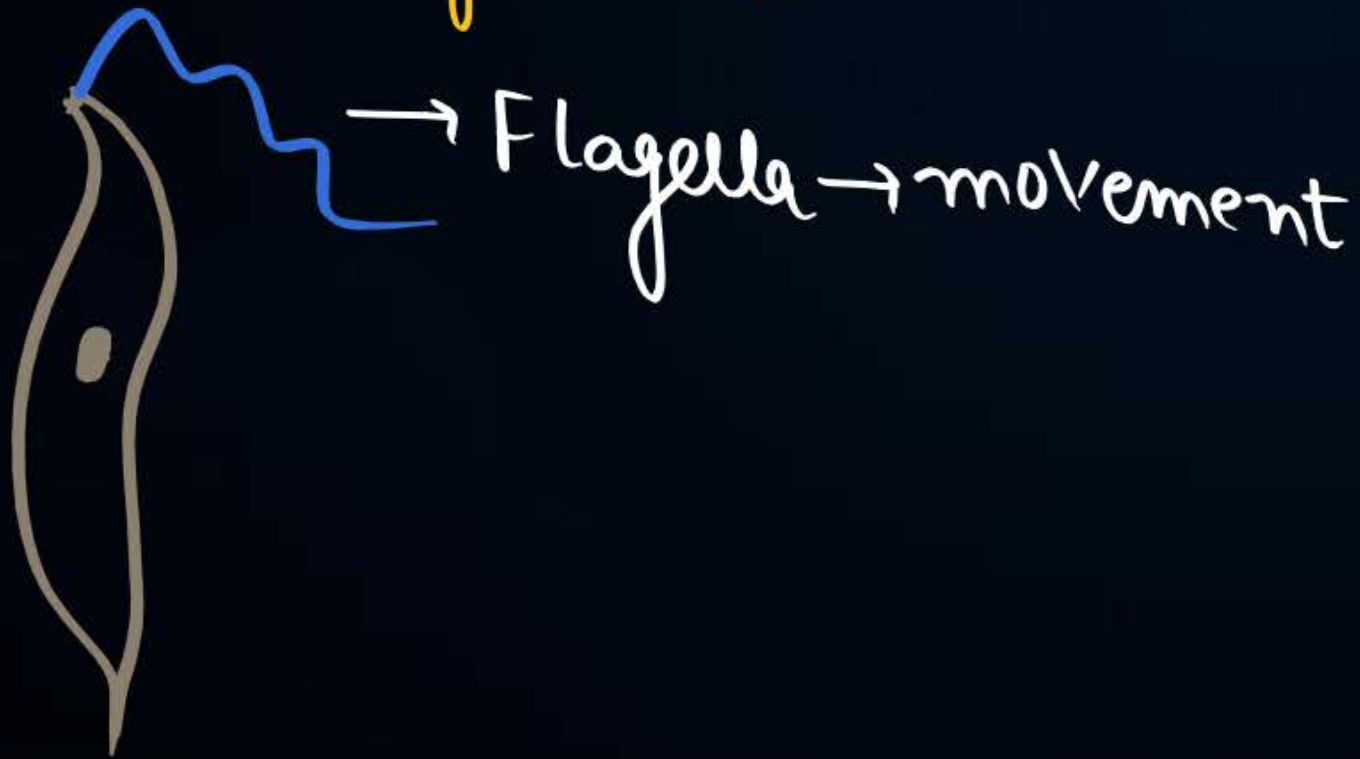
Longitudinal Binary fission In Leishmania

LEISHMANIA

Uni-cellular

Disease Causing Protozoa → Cause → "Kala-azar"

#



- ✓ Kala azar
- ✓ Black fever
- ✓ Dum Dum fever



Longitudinal Binary fission In Leishmania

—Karyokinesis— —Cytokinesis—

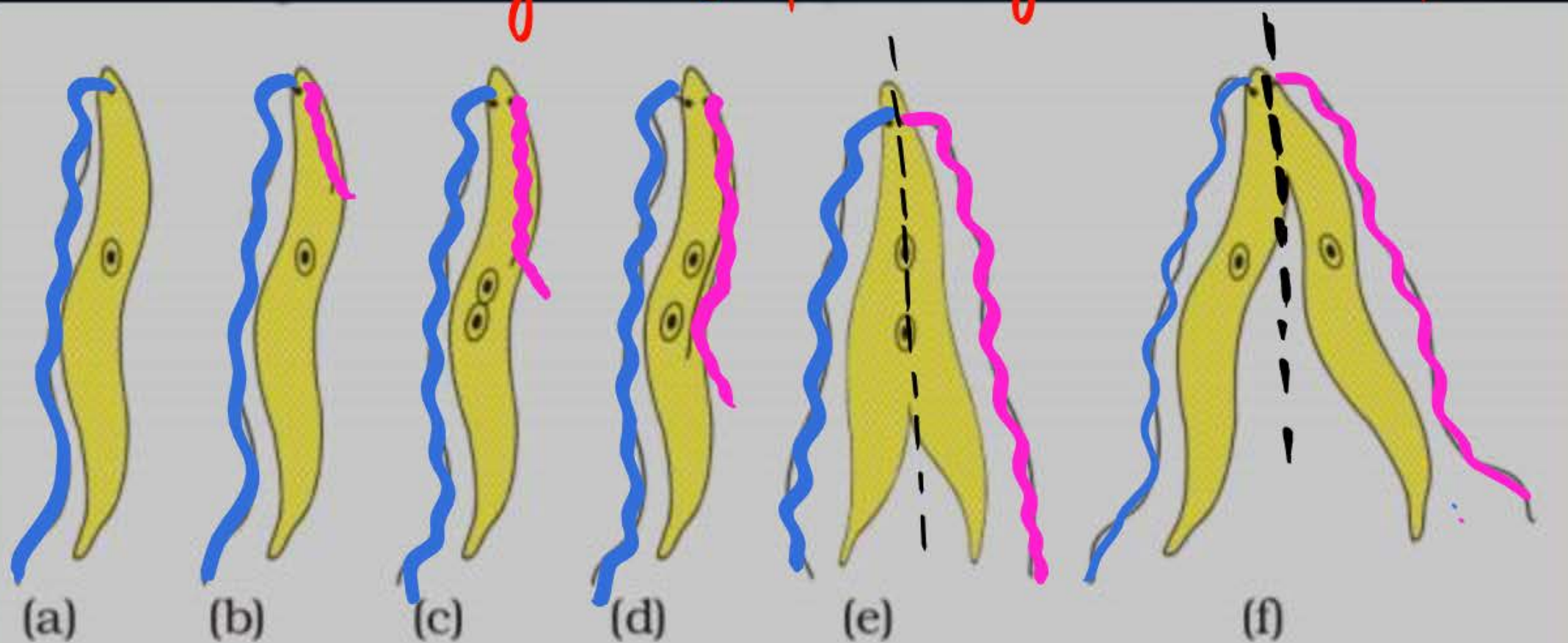


Figure 8.1(b) Binary fission in Leishmania



Multiple fission In plasmodium



Plasmodium

{ Malarial parasite }

→ Causes Malaria

Spreads due to female Anopheles Mosquito

affects —
 → RBC
 → Liver Cells

Uni-cellular

Protozoa

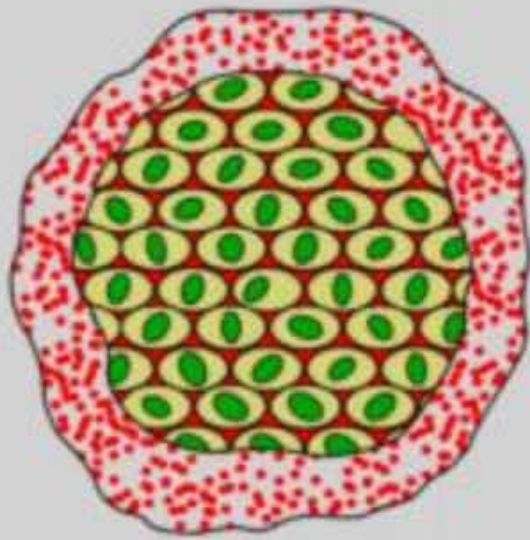


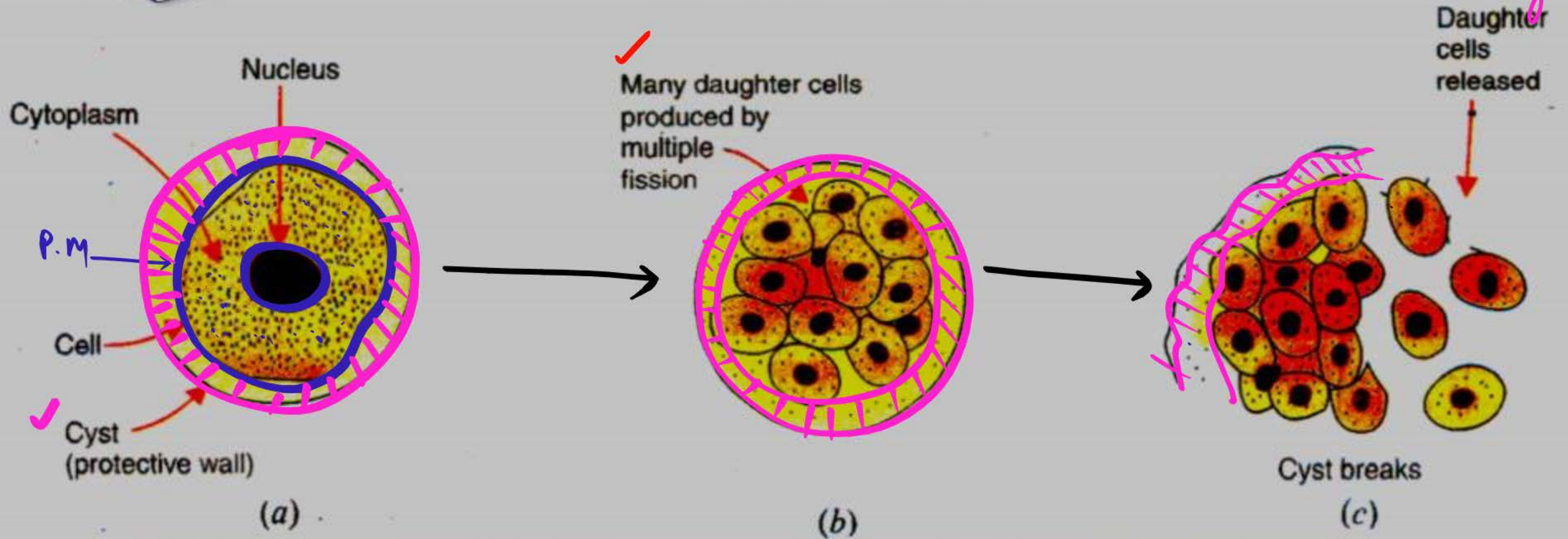
Figure 8.2

Multiple fission in Plasmodium

→ Reproduces by "Multiple fission"



Multiple fission In plasmodium



Question

#PYQ ✓



Both protozoa i.e. Leishmania and Plasmodium reproduces by fission but both methods are still different from each other.
Explain ✓



Dono alag alag hote hain kya?

Differences between Binary Fission and Multiple Fission



✓ **Binary fission**

Two daughter cells are formed from the splitting of the parent's cell or Nucleus.

Divides only once.

Includes a definite pattern of division.

Example: ✓ Amoeba, ✓ Bacteria, ✓ Leishmania, ✓ Paramecium

Multiple fission ✓

Many daughter cells are formed from the splitting of the parent's cell or Nucleus.

Divides repeatedly.

Has no definite pattern of division.

Example: Plasmodium ✓

H.S.



Which type of fission is shown by amoeba ?

- A Longitudinal binary fission
- B Transverse binary fission
- ☒ C Irregular binary fission
- D Multiple fission



Which of the following disease is caused by leishmania ? ✓

A Malaria

✓ B Kala azar ✓

C Dengue

D Typhoid





Fragmentation in spirogyra

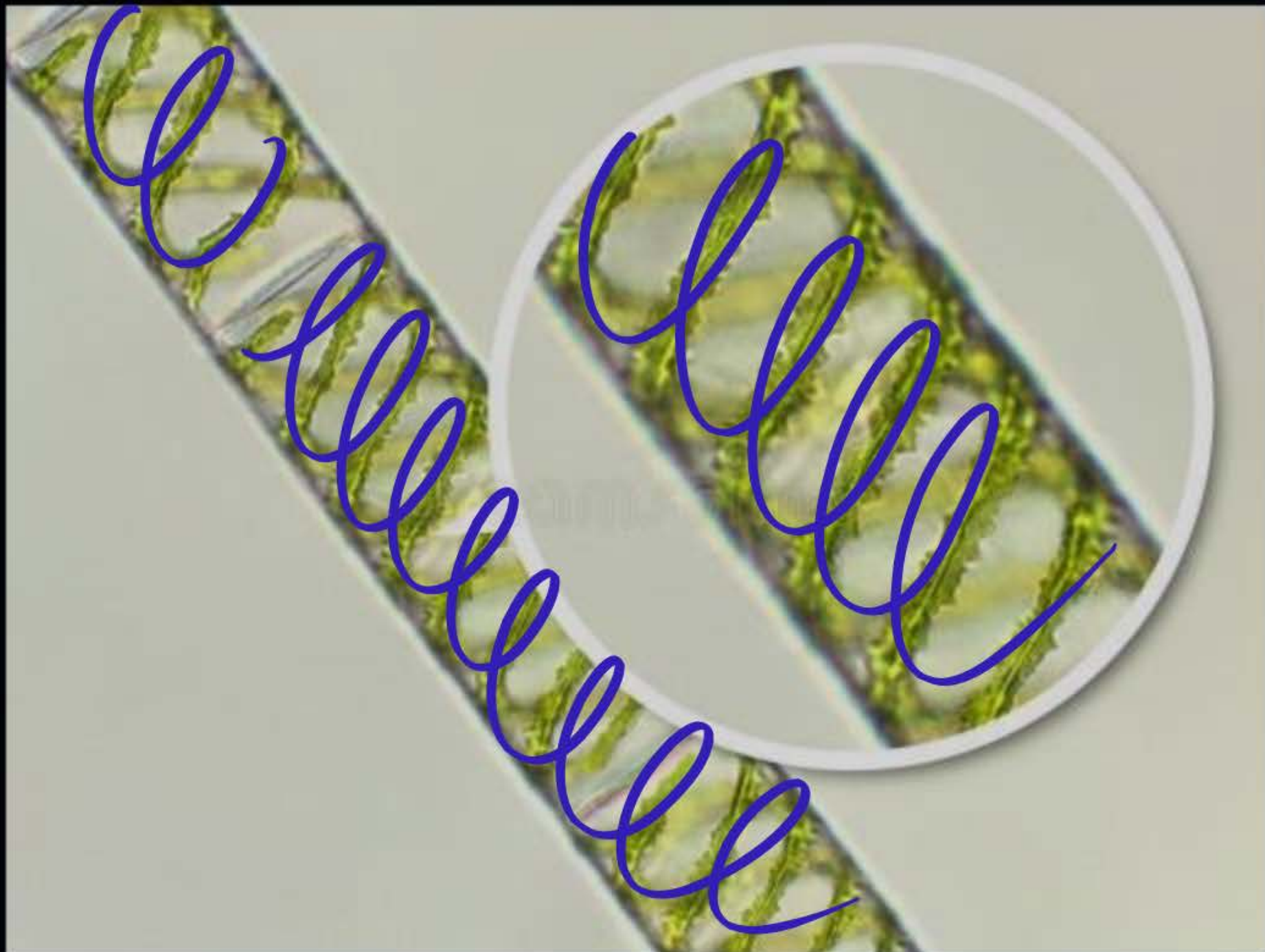
green algae





SPIROGYRA

- # Multi-cellular
- # Green algae → Chlorophyll
→ Photosynthesis
- # Spiral Shaped chloroplast.

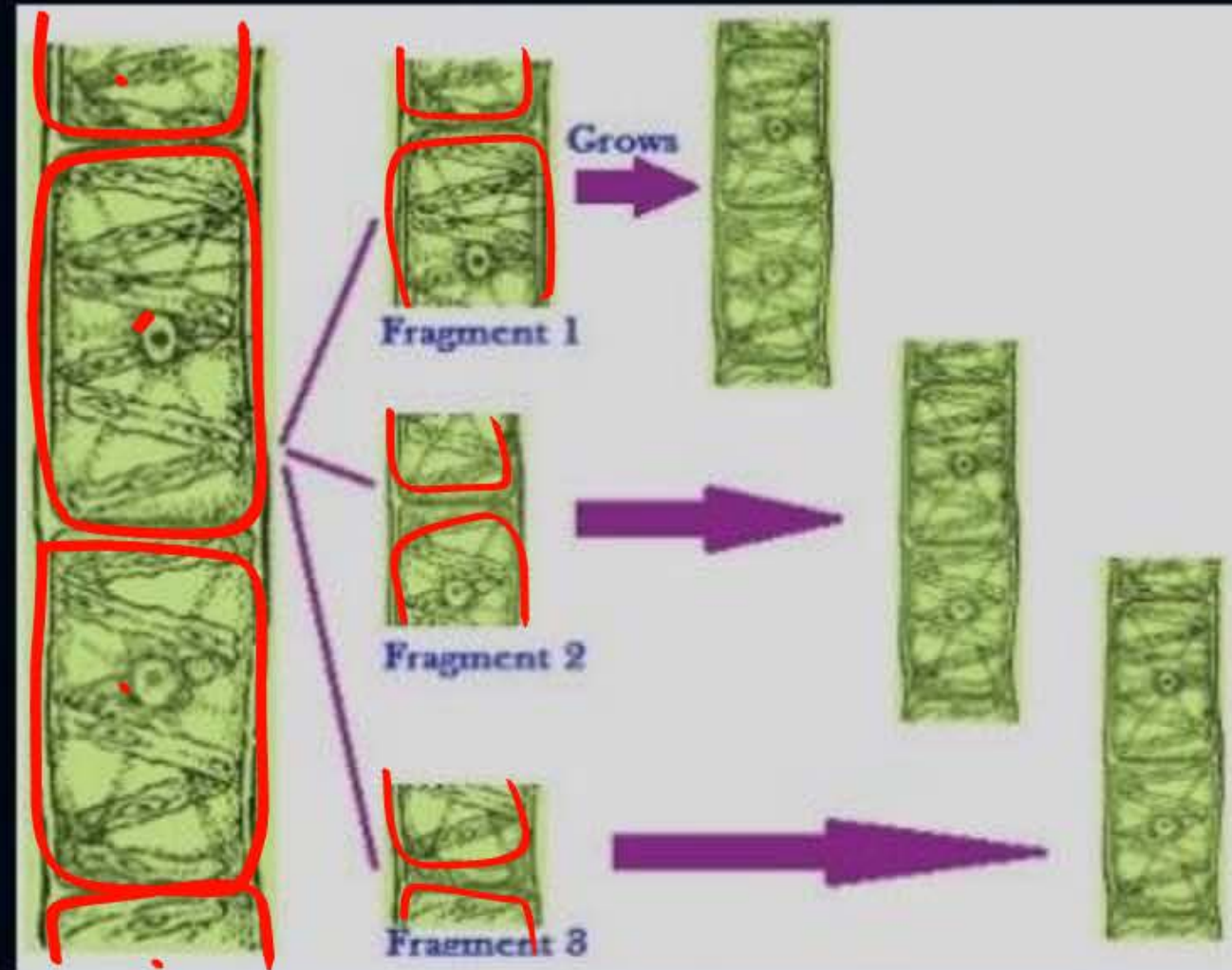




Fragmentation in spirogyra



Upon Maturation,
Spirogyra break
itself into many
small fragments

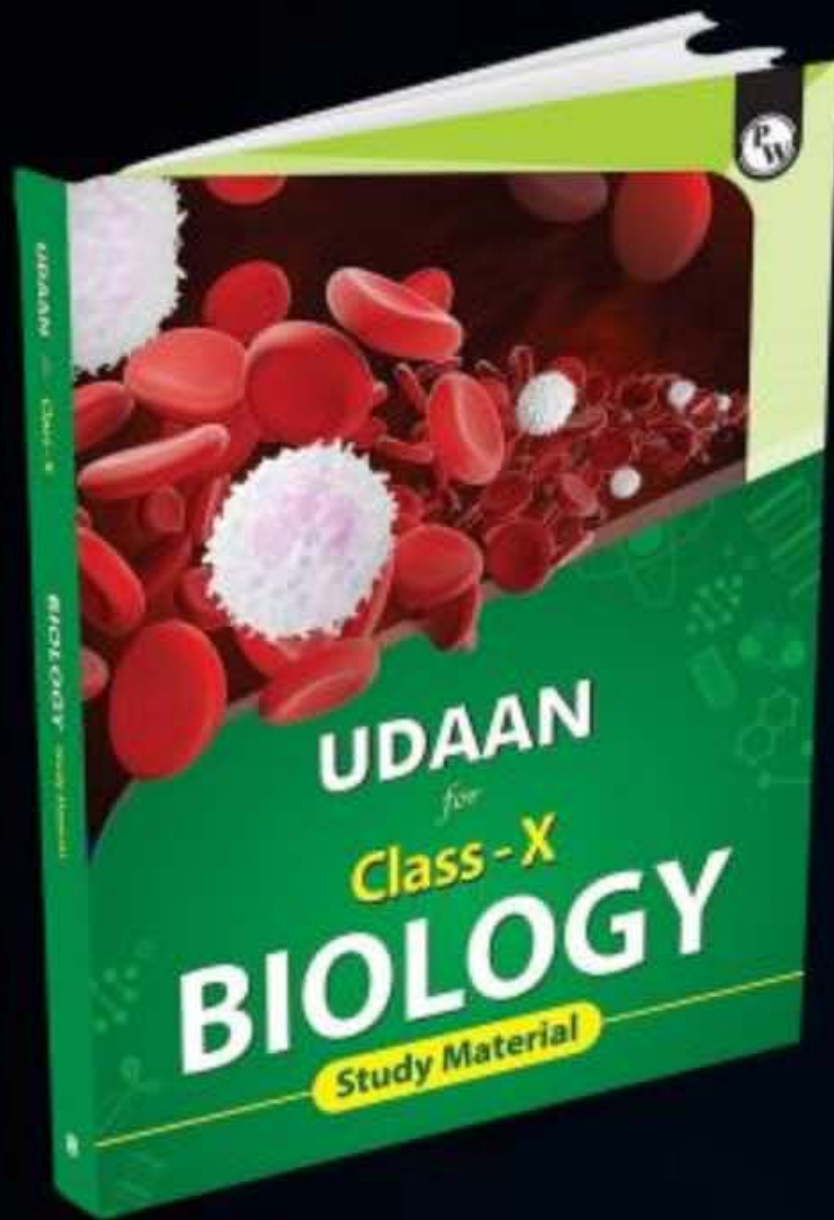


Each fragment will
grow into new Spirogyra

Which disease is caused by *plasmodium vivax* ?

- A Black fever
- B Dengue
- C Malaria ✓
- D Typhoid





Homework



FROM PW MODULE
(Udaan - CLASS 10)

PAGE : 14 + Q-2, Q-13

A cartoon illustration of a young boy with orange hair, wearing a black graduation cap and gown, standing on a purple book. He is holding a green globe in his left hand.

Question of the Day

Which cell organelles can divide itself by binary fission ? ✓



Joke/Meme of the Day



Spirogyra when it mature and becomes ready to reproduce **



Main toot gaya ab

#DHA
#NCERT



THANK
YOU

