

Plant morphology पादप अकारिणी

Reproduction जनन

① पुष्प flower

पादप लैंगिक भाग है Sexual part of plant

पुष्प के भाग Part flowers

(i) Sepal बाह्य फल पुंज

(ii) petals (corolla) फल पुंज (परखुंजी)

पुंकेसर
(iii) Stamen नर भाग

(iv) Pistil / carpel स्त्रीकेसर

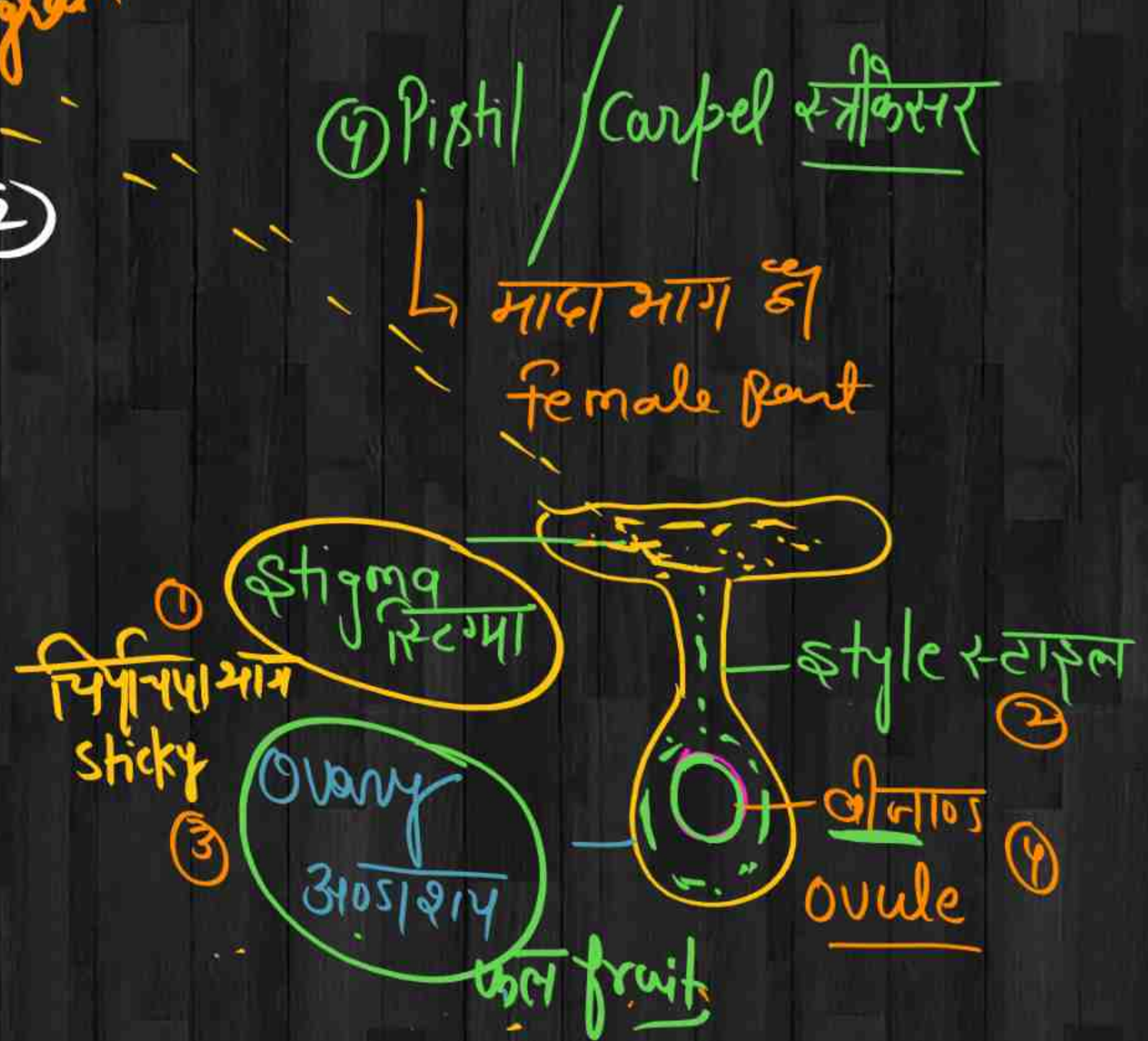
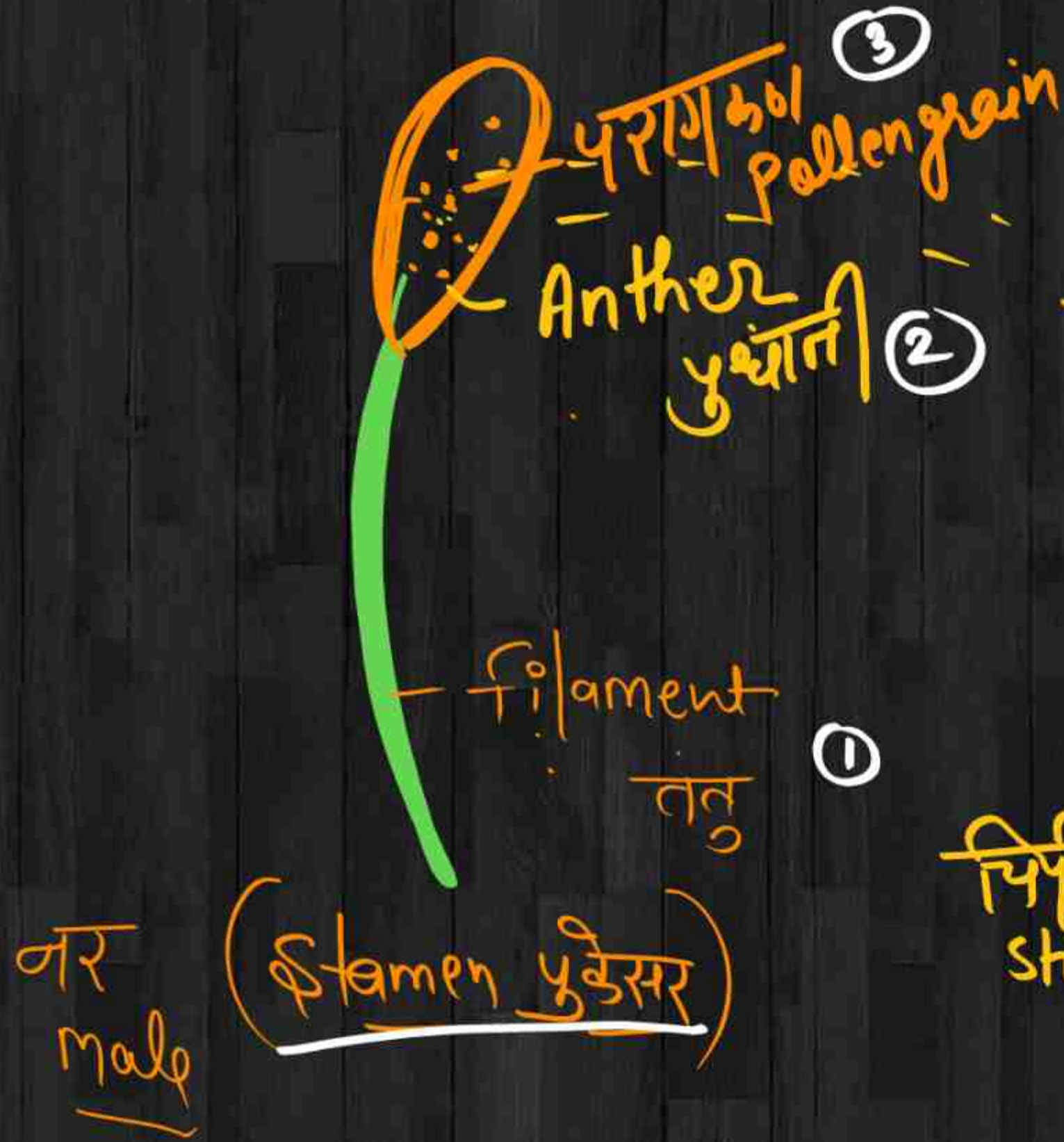
① Sepal बाह्य फलपुज → हरे रंग के होते हैं Green colour
↳ सुरक्षा प्रदान करते हैं Provide protection

② Petals पंखुड़ी → पुष्प का सर्वाधिक आकर्षित करने वाला भाग है
Most Attractive part of plant

↳ भवरा, तिली, मधुमक्खी
Butterfly Honeybee

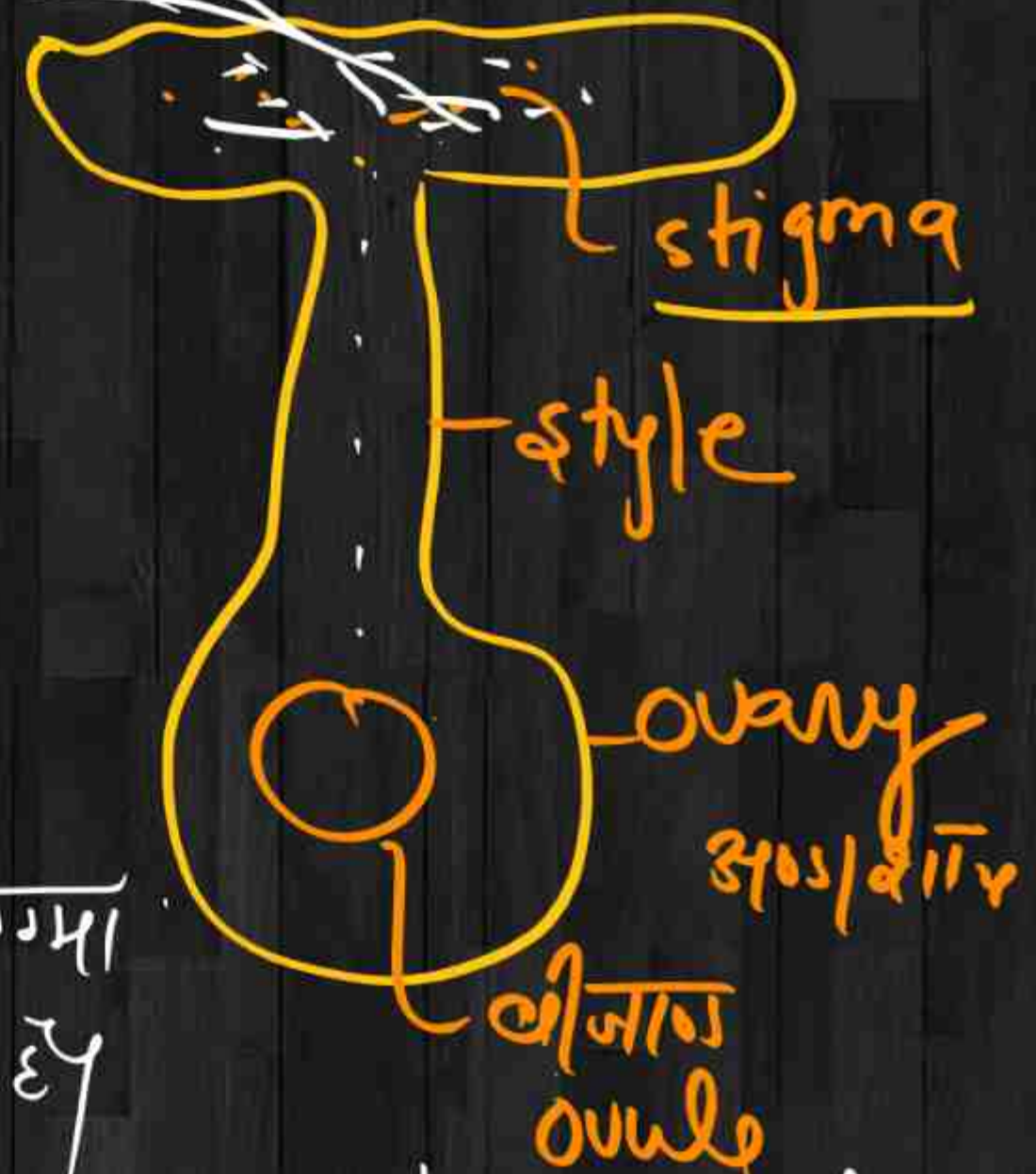
(रिज)

③ Stamen पुंकेसर → यह पुष्प का नर भाग है
It male part of flower





परागण
Pollination



परागकणों का पुष्पानी से मादा के स्तिग्मा तक पहुँचने की क्रिया परागण कहलाती है।
"transfer of pollengran from Anther to stigma of female"

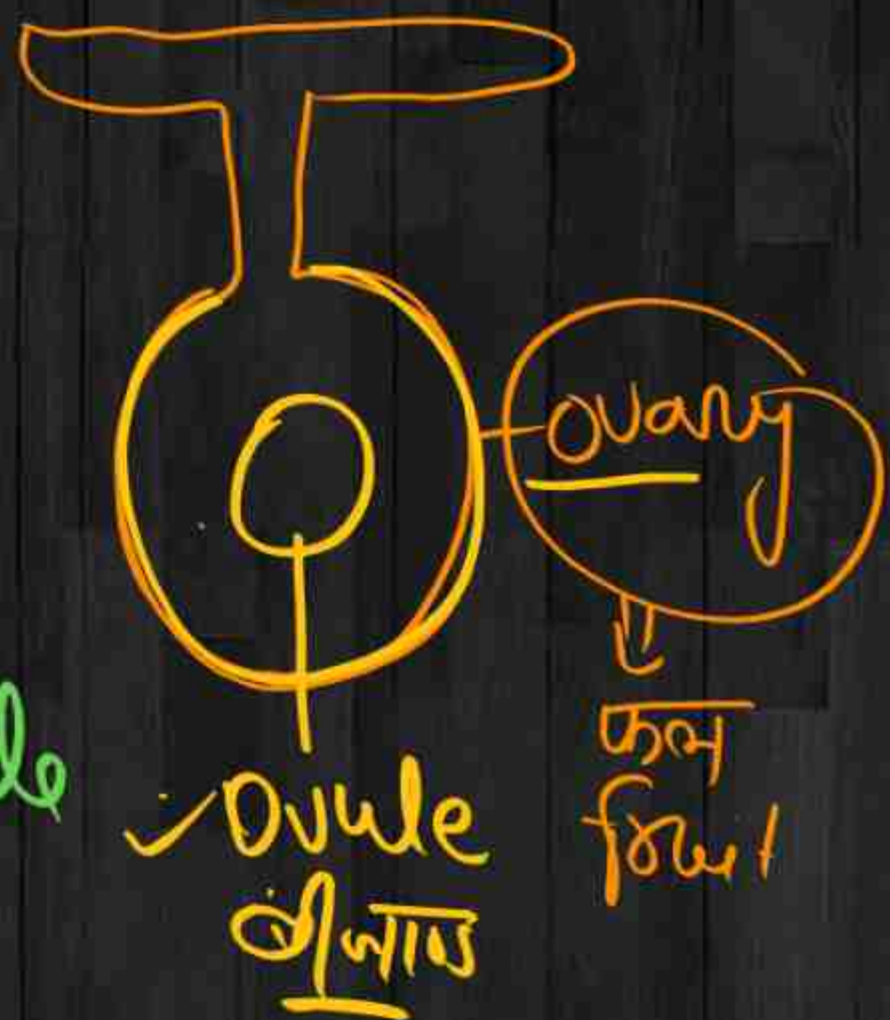
Note
नोट

⇒ फल का निर्माण मादा के अण्डाशय से होता है।

Formation of fruit take place by the part of
ovary of female

→ फल के अंदर बीज का निर्माण बीजाणु द्वारा होता है।

formation of seed take place by the ovule



Stamen
नर

Petal

Pistil
मादा

Sepal



Plant tissue & Hormone. पादप ऊतक और हार्मोन

Tissue
ऊतक

→ 'समान कोशिकाओं का समूह'
Group of similar cell



अध्ययन
Study

→ Histology हिस्टोलॉजी

Hormone
emitting

10 min

Classification

पादप ऊतक plant tissue



Meristematic tissue
विभज्योत्तक ऊतक

विभाजन होता है
division take place here

- ① Apical शीर्ष
- ② Internode मध्य ऊतक
- ③ Lateral पार्श्व

Permanent tissue
स्थायी ऊतक

विभाजन नहीं होता है
not division

सरल
Simple

जटिल
Complex

Permanent tissue स्थायी ऊतक

सरल Simple

- ① Parenchyma परिचरित
- ② Collenchyma कोलरित
- ③ Sclerenchyma स्कलरित

Complex जटिल

xylem

जाइलम

phloem

फ्लोएम

(99)

Xylem जाखम

- ① जल व खनिज पदार्थों का स्थानान्तरण करता है

transportation of water
& mineral

- ② एकदिशात्मक है
One directional



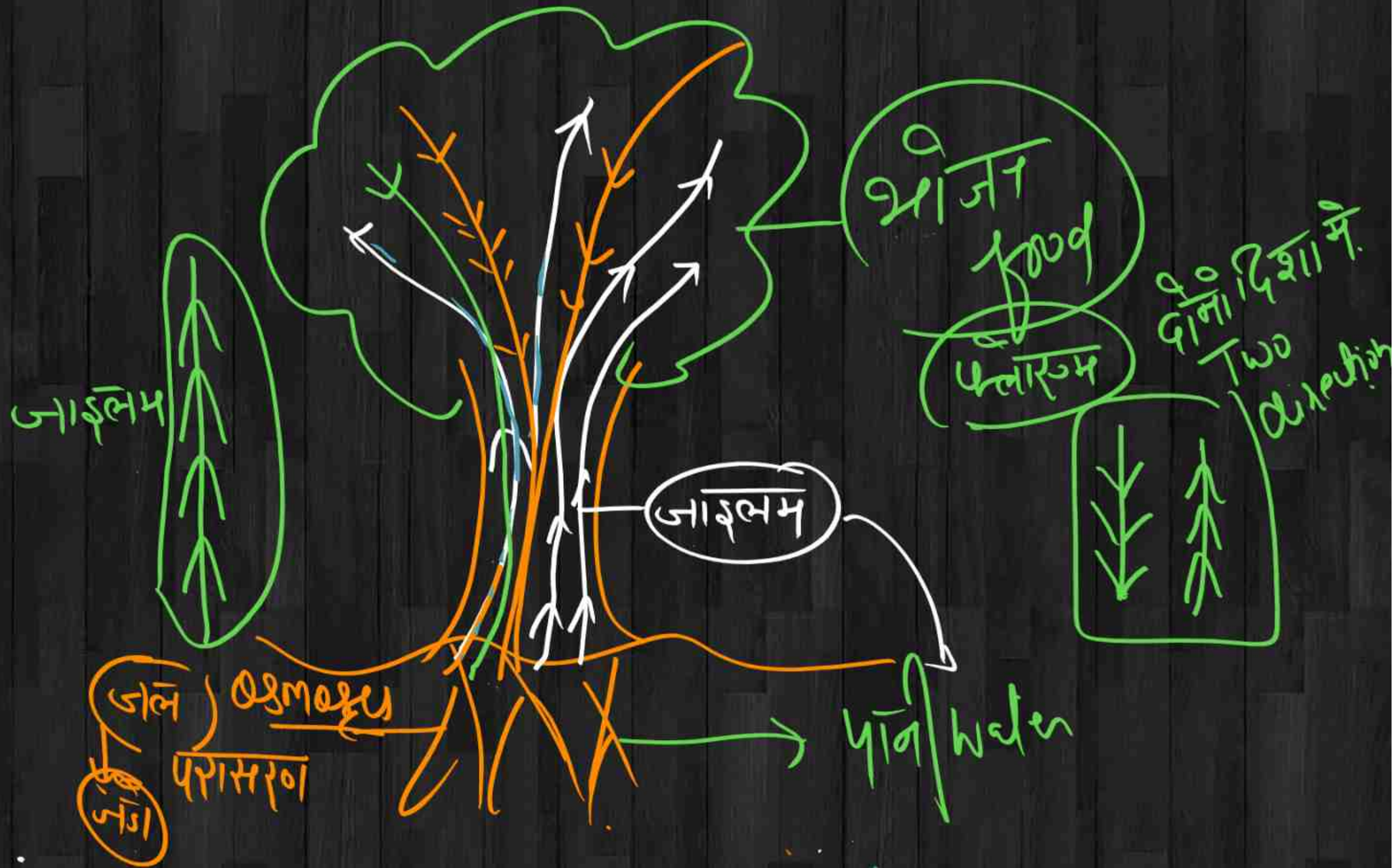
Phloem फ्लोएम

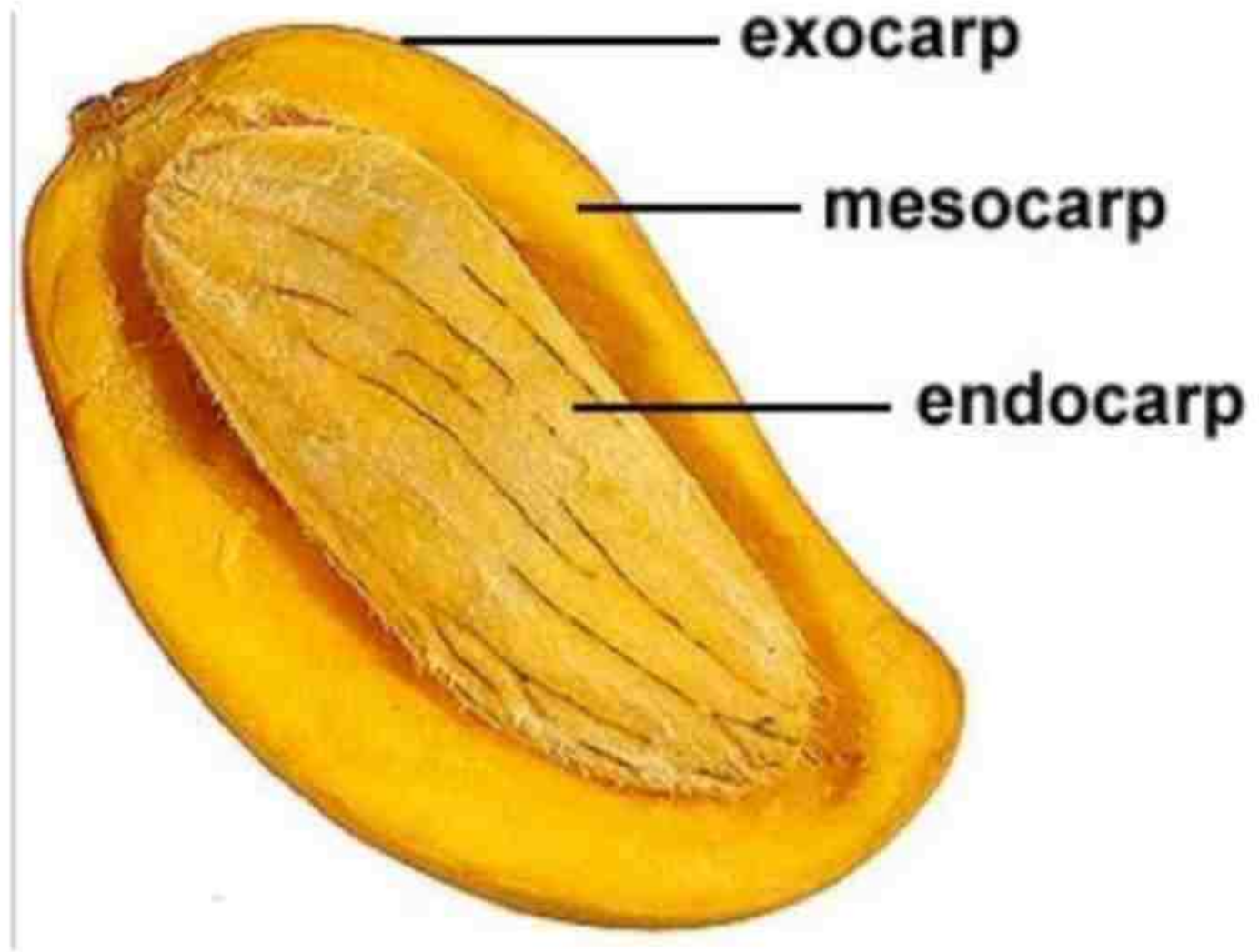
- ① यह पत्तियों से भोजन का स्थानान्तरण करता है

transportation of food from
leaves

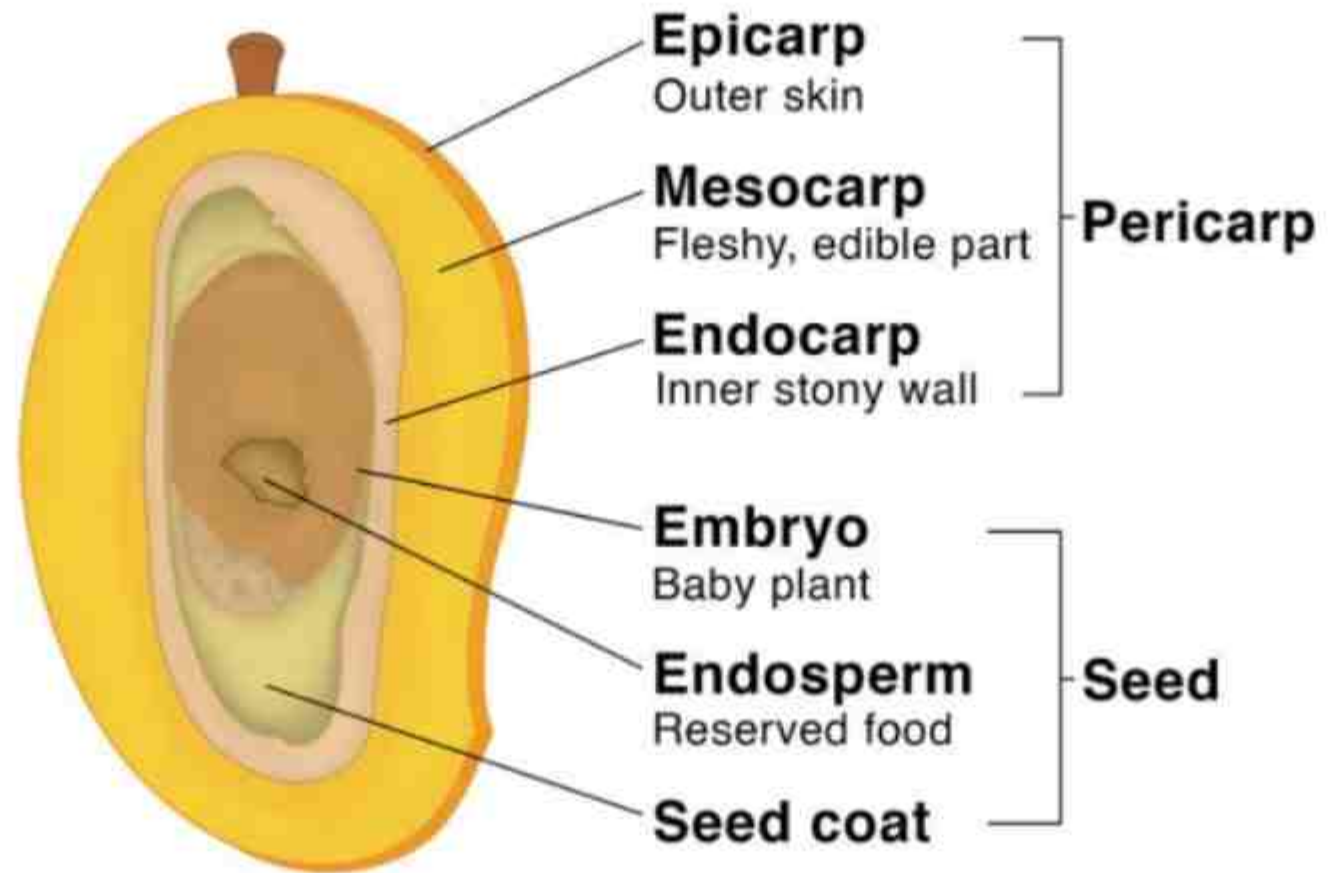
- ② द्विदिशात्मक है
Two directional

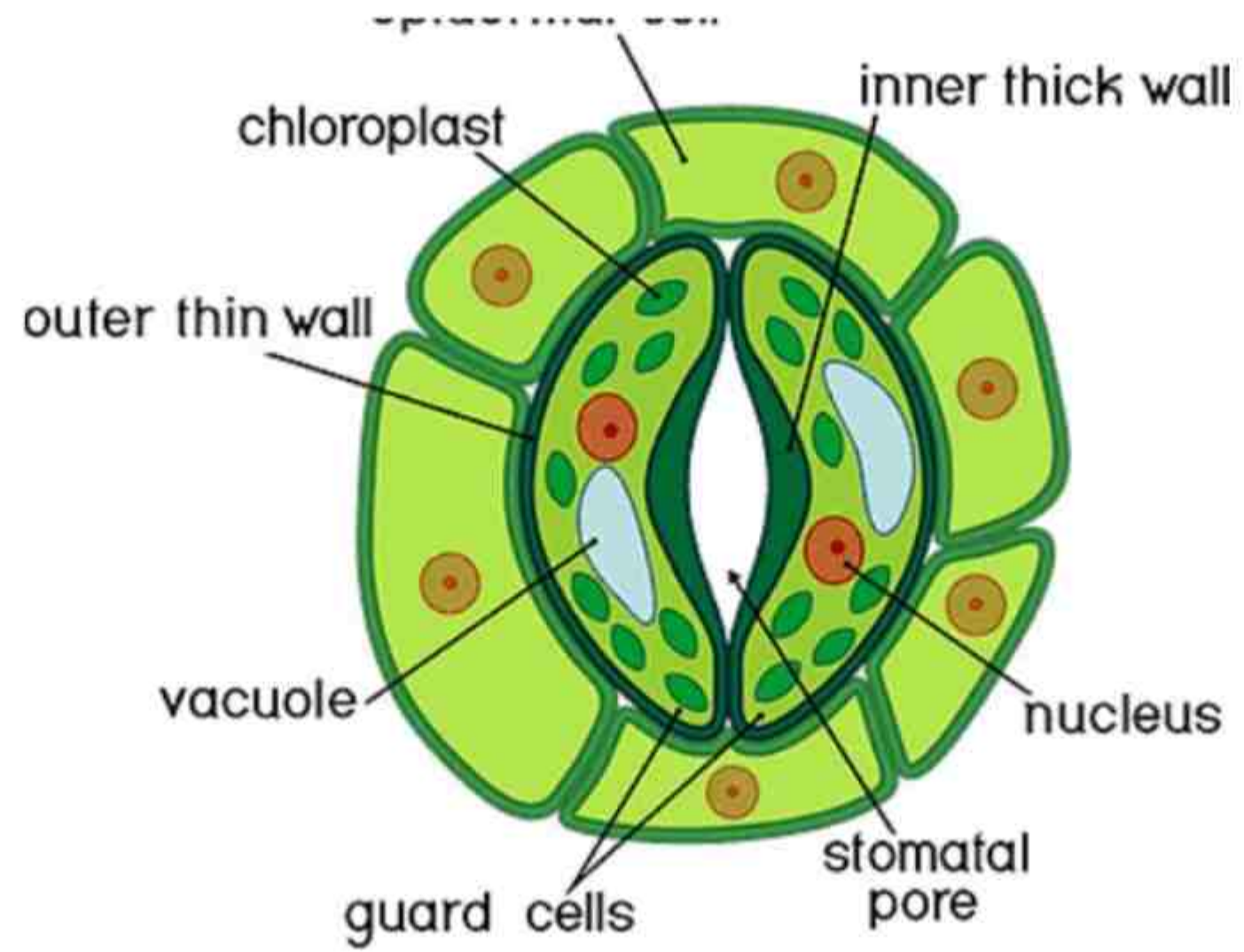






Parts of a Fruit

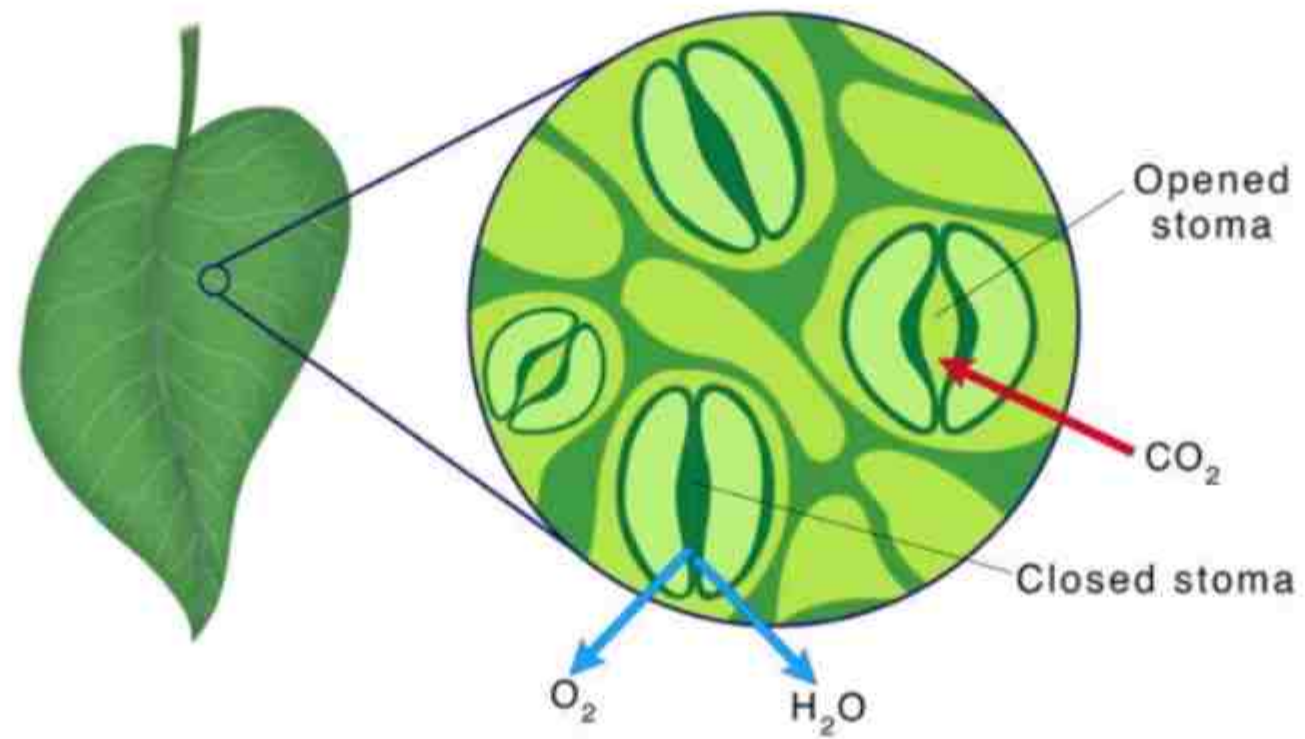


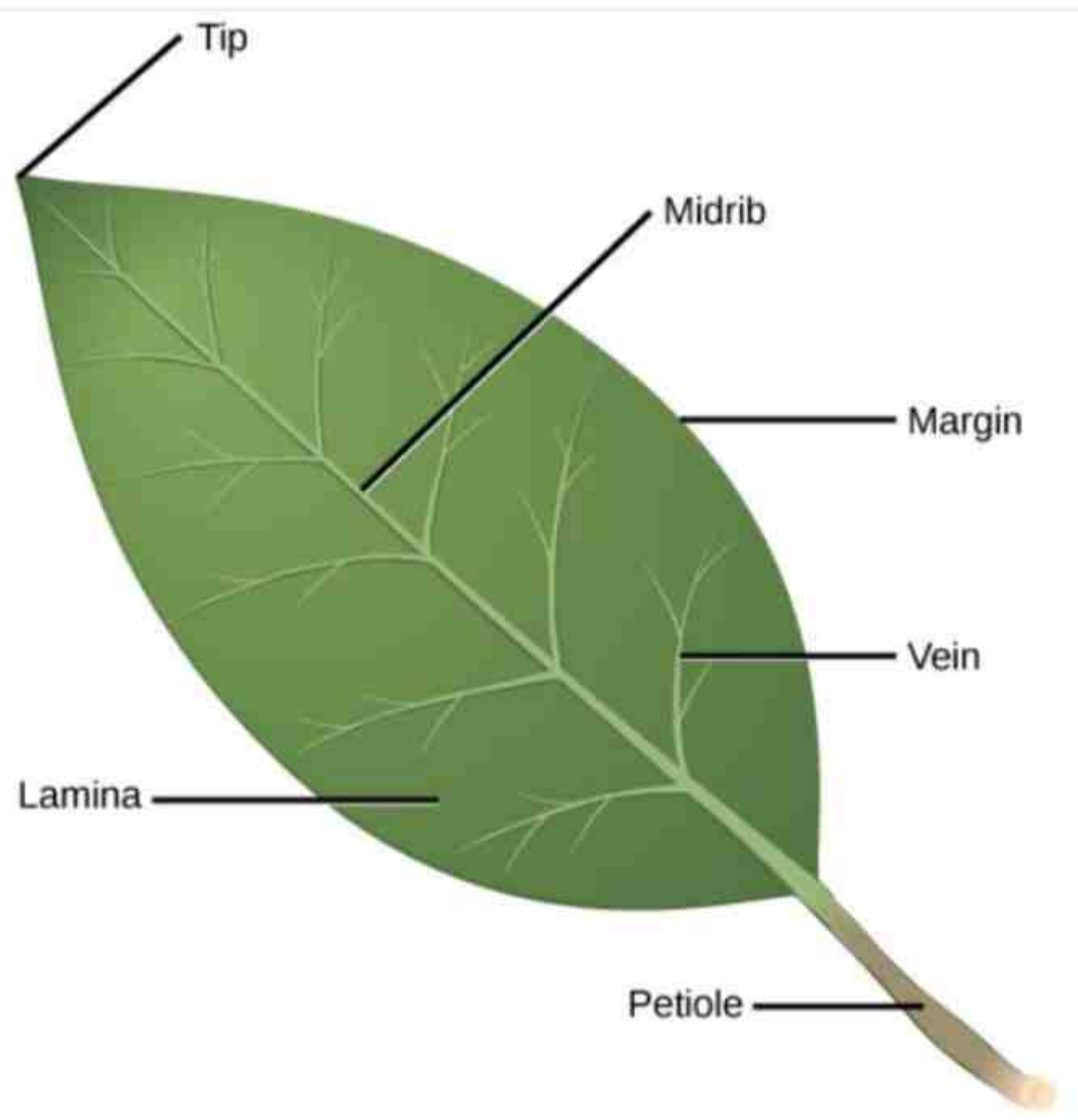


stoma open

Stomata

Science Facts





Modification of Root

To perform special functions the roots change their size and shape.



STORAGE OF FOOD
e.g. Beet root



MECHANICAL SUPPORT
e.g. Banyan tree



GASES EXCHANGE
e.g. Avicennia



SUCKING ROOT
e.g. Cuscuta

PLANT MODIFICATION

Modification of stem

Stem modified for storing the food materials and for vegetative propagation.



AERIAL MODIFIED
e.g. Cactus



SUB-AERIAL MODIFIED
e.g. Eichhornia



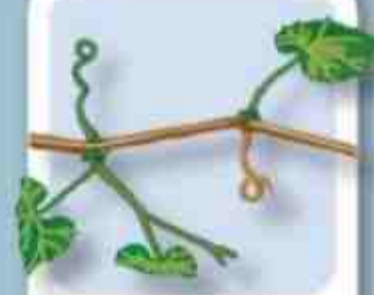
UNDERGROUND STEM
e.g. Colocasia

Modification of Leaf

Leaves have changed themselves to adapt to their environment



SPINES
e.g. Opuntia



TENDRILS
e.g. Pisum



PHYLLODE




TRAPS
e.g. Nepenthes

Tendrils: These types of stems are slender, spirally coiled, which help a plant to climb. Example: Passiflora, Grapevine etc.

Bulbil: These are modified axillary buds which become fleshy and swollen due to the storage of food. They help in vegetative propagation to form a new plant. Example: Dioscorea.

Thorn: These are hard, woody, and pointed structures that protect plants from grazing animals. It originates from the axillary or terminal bud. Example: roses, citrus, bougainvillea, duranta etc.

Cladodes: These are non-fleshy and cylindrical that contain only one internode. Example: Asparagus, butcher's broom.

Phylloclade: These are green, fleshy, and flattened or cylindrical branches containing chlorophyll and photosynthesis. This modification is found in xerophytic plants and stores water. Example: Opuntia, Casuarina, 

Aerial stem



Passiflora (Tendrils)



Dioscorea (Bulbil)



Bougainvillea (Thorn)



Asparagus (Cladodes)



Opuntia (Phylloclade)

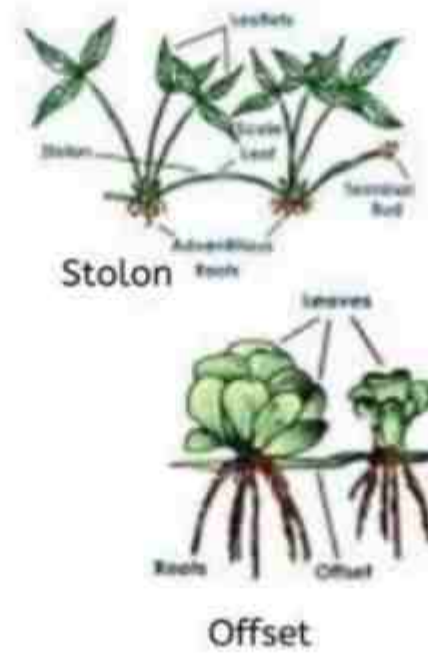
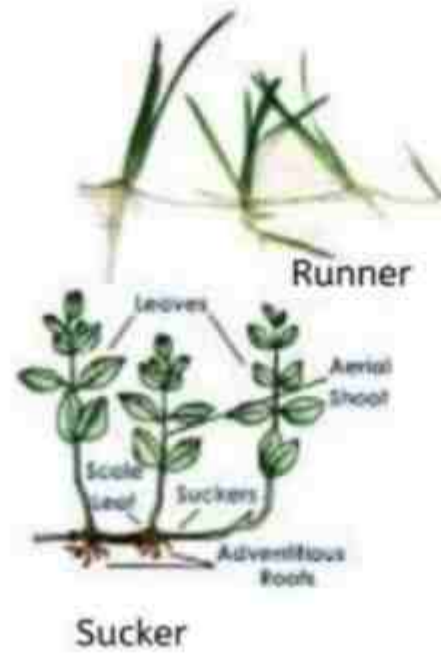
Runner: It is a creeper that runs horizontally along the surface of the soil. Runners have long internodes. The nodes have scale leaves, adventitious [roots](#), and auxiliary buds. An underground runner is known as sobole. Example: Grass, Cynodon, Oxalis.

Offset: These are shorter and thicker than the runner with a single internode. It originates from the leaf axis and grows horizontally. Offsets are often found in [aquatic plants](#) like water lettuce, water hyacinth, etc.

Stolon: It grows above ground for some time and then bends towards the ground until it touches the ground. Stolon arises from the lower part of the main axis. Example: Jasmine, colocasia, etc.

Sucker: The sucker stem is very similar to the stolon, but it grows obliquely upwards and gives rise to a new plant. Example: Garden chrysanthemum, strawberry, pineapple, mentha, etc.

Sub-Aerial Stem



Underground Stem



Ginger (Rhizome)



Colocasia (Corm)

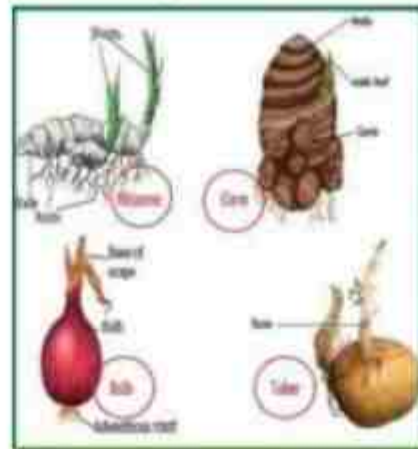


Potatoes (Tuber)

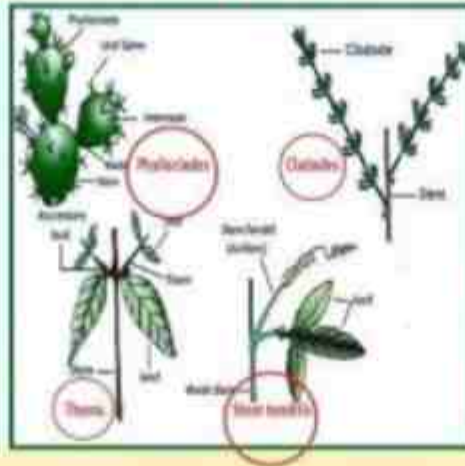


Onion (Bulb)

Underground Stem



Aerial Stem



Sub-Aerial Stem

