

B.SC. PART TWO
(3RD SEMESTER)
PRACTICAL FILE
BOTANY

INDEX

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Date. 10./12./2022..

Ranunculaceae

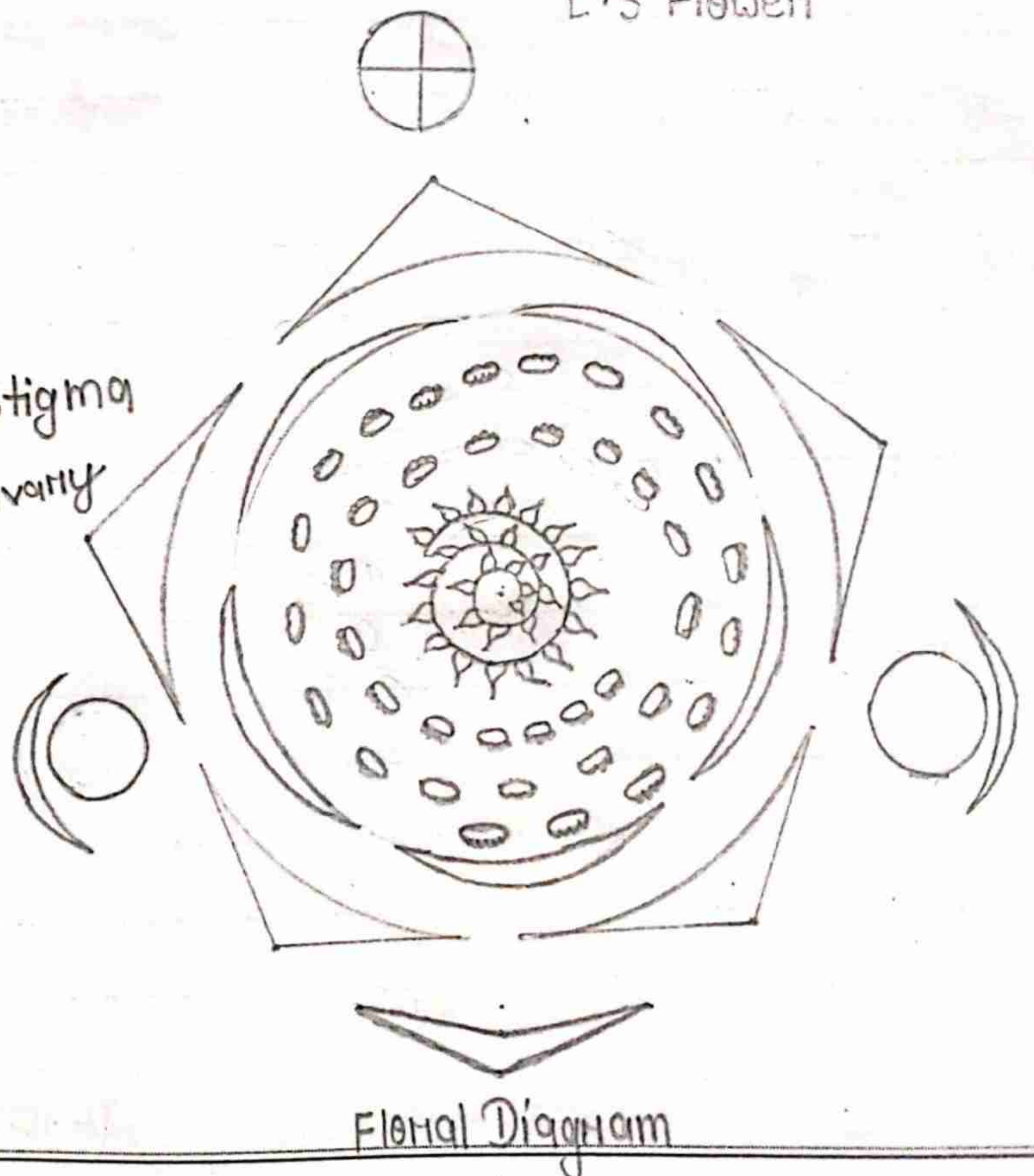
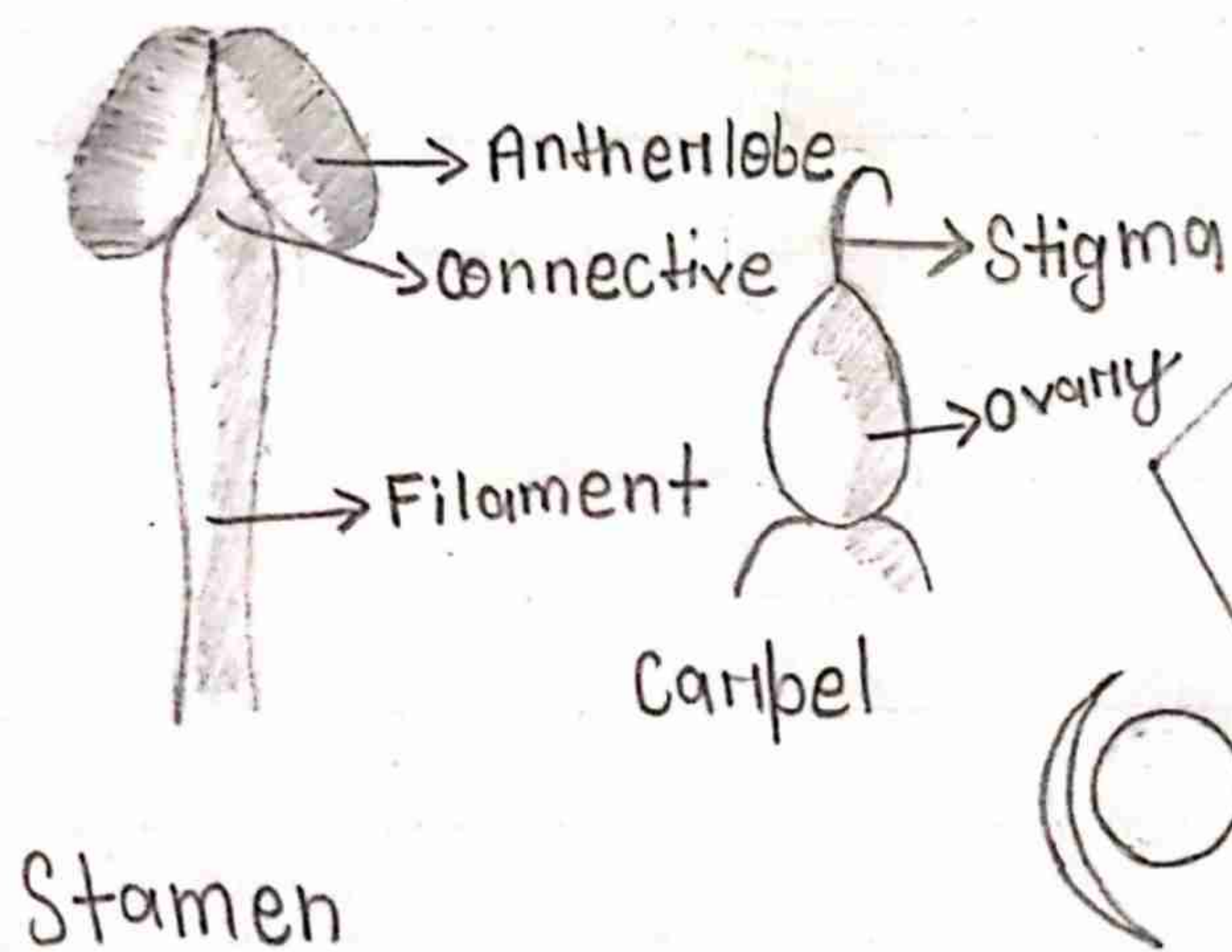
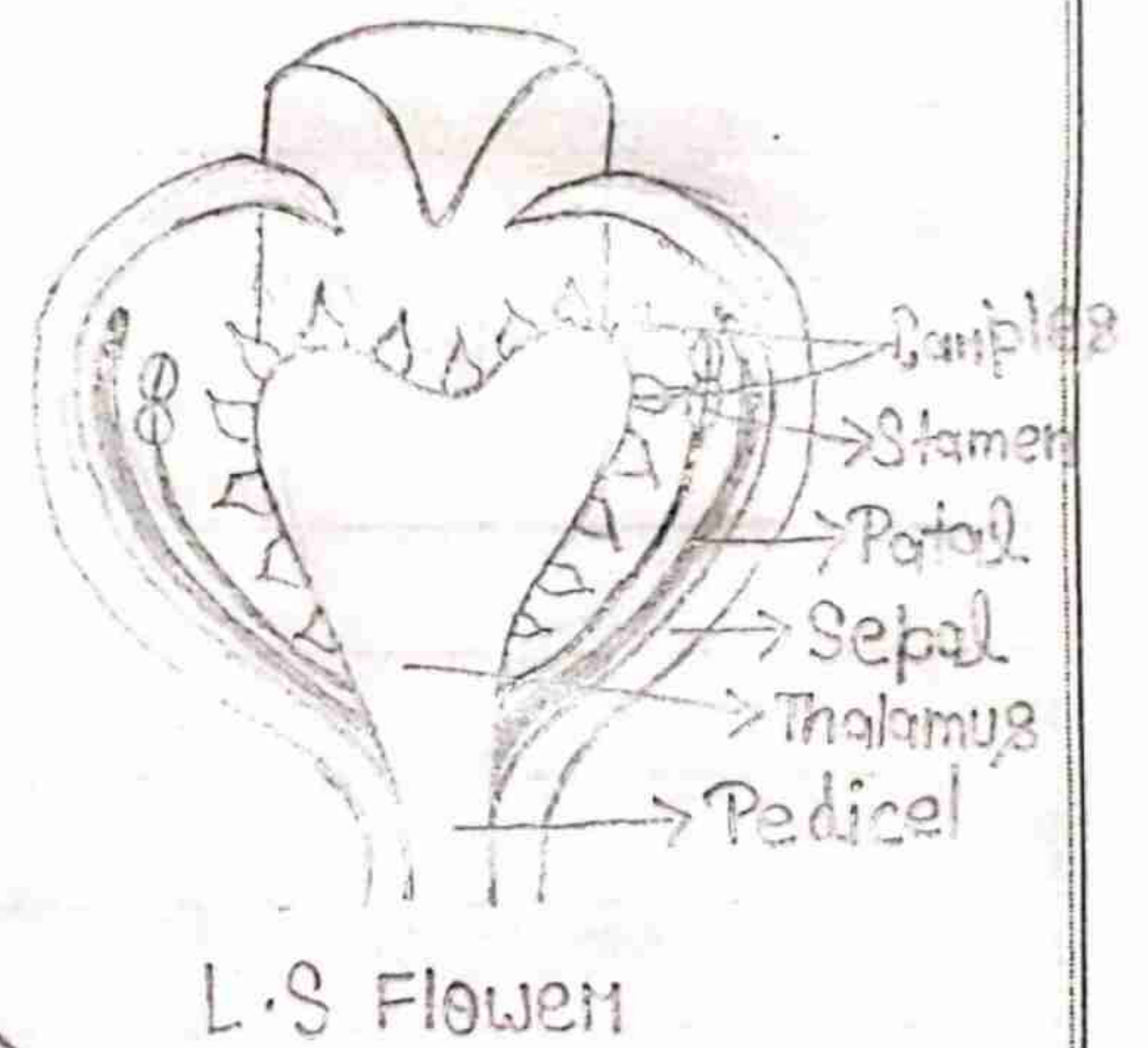
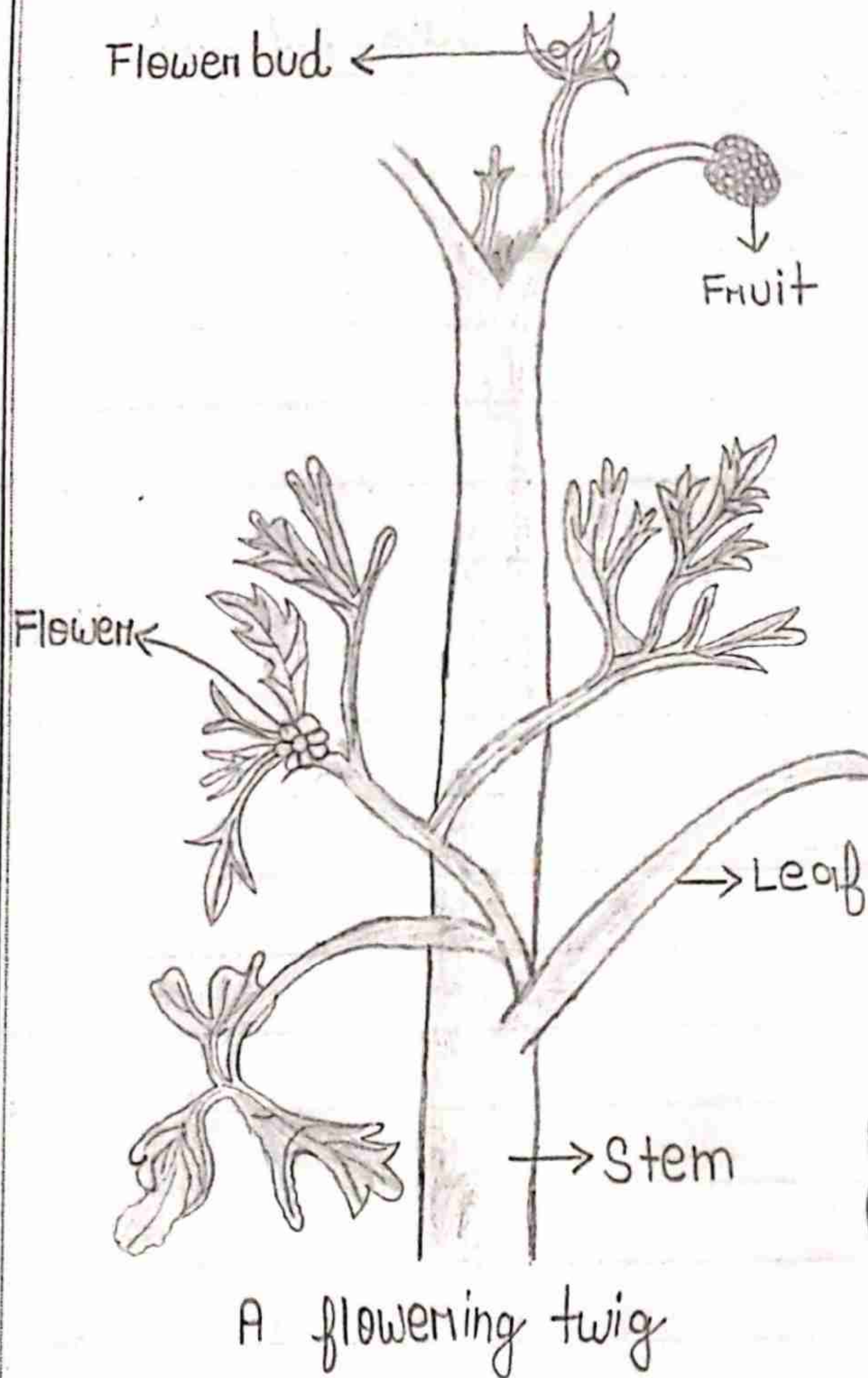
Comment ⇒

- (1) Habit ⇒ Erect or climbing, annual or perennial herbs, or shrubs.
- (2) Root — Tap root, branched.
- (3) Stem — Herbaceous, acausal, usually erect.
- (4) Leaf — The leaves are radical or alternate, exstipulate, simple or compound, often with twisted sheathing base.
- (5) Inflorescence — Usually cyme, solitary terminal in anemone and Nigella long racemes.
- (6) Flower — Bractiate, Actinomorphic, bisexual, hypogynous, acyclic or hemicyclic.
- (7) Calyx — Sepals 5 or more, polysepalous, petaloid, imbricate or quincuncial aestivation coraceous.
- (8) Corolla — Petals 5 or more polypetalous, aestivation, imbricate or quin - quincuncial.
- (9) Androecium — Stamens many (indefinite), polyandrous and spirally arranged anther and exserted.

Teacher's Signature :

Systematic position

Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-class	—	Polypetalae
Series	—	Thalamiflorae
Order	—	Ranales
Family	—	Ranunculaceae
Genus	—	Ranunculus
Species	—	Sceleratus



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Date...../...../.....

- (10) Gynoecium — Carbels many, eplocarpous ovary superior, unilocular.
- (11) Fruit — An etaenio of achenes on follicles.
- (12) Seeds — Containing oily endosperm and a minute straight embryo.
- (13) Floral formula — $B_m, bml, \oplus, \text{♀}, K_5, C_5, A_5, \underline{G}_1$

Teacher's Signature :

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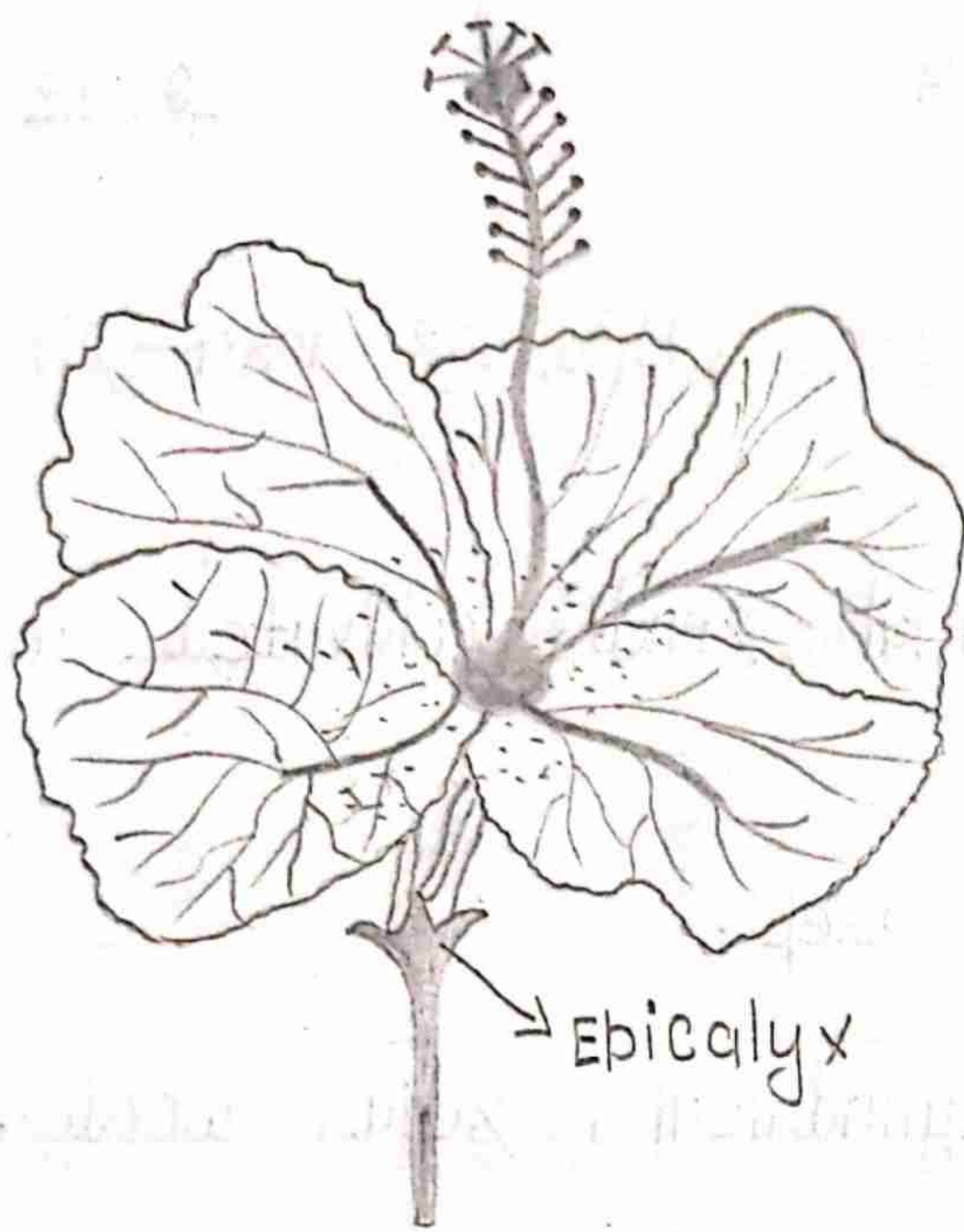
Date..10/12/2022

Malvaceae (Hibiscus rosa-sinensis)

Comment →

- (1) Habit ⇒ An ornamental shrub, cultivated in tropics perennial.
- (2) Root — Tap, branched and deep.
- (3) Stem — Erect, branched, cylindrical, solid, woody, glabrous.
- (4) Leaf — Alternate, simple, Petiolate, stipulate, ovate, serrate margin, acute apex, glabrous, unicostate reticulate venation.
- (5) Inflorescence — Solitary axillary.
- (6) Flower — Embiculate, pedicellate, complete, actinomorphic, hemiphenodite, pentamerous, hypogynous, large, showy, ped. mucilaginous.
- (7) Epicalyx — Five to seven, green, linear.
- (8) Calyx — Sepals 5, gamosepalous, ovate, campanulate, valvate and inferior.
- (9) Corolla — Petals 5, polypetalous, mucilaginous, twisted, med. united at the base and adnate to the staminal tube.
- (10) Androecium — Stamens numerous, forming a tube, monadelph-

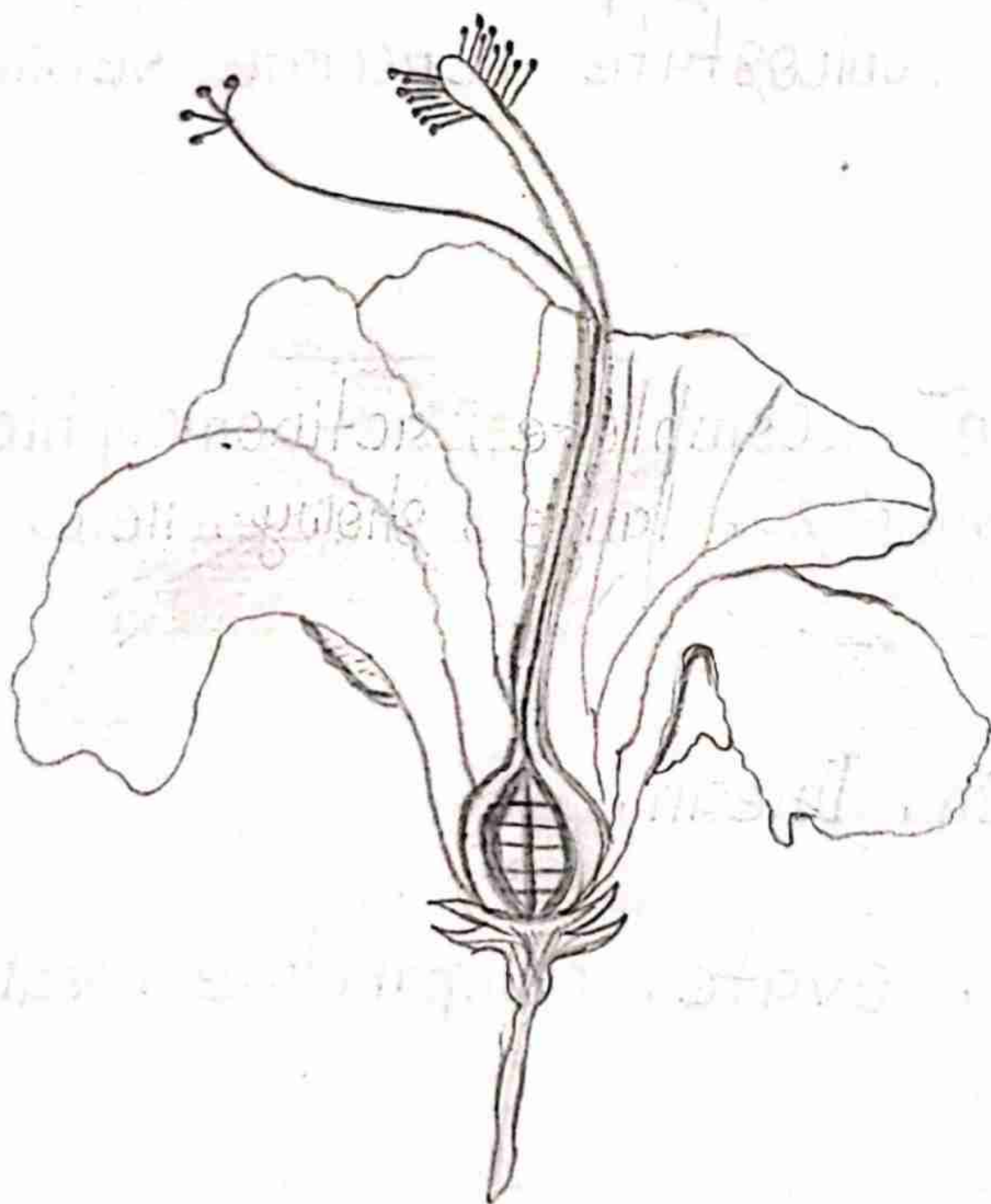
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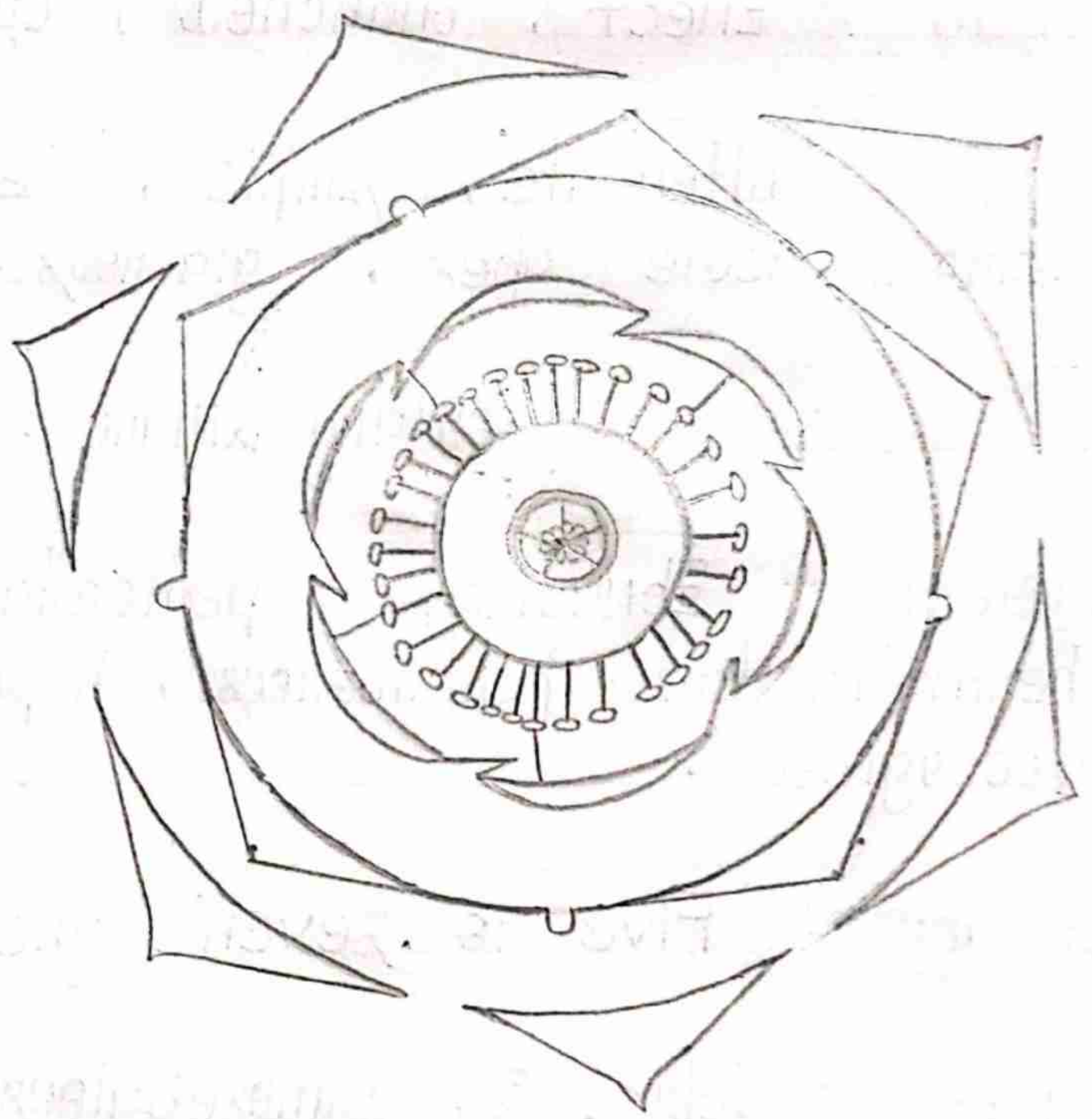
Systematic position

Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-class	—	Polypetalae
Series	—	Thalamiflorae
Order	—	Malvales
Family	—	Malvaceae
Genus	—	Hibiscus
Species	—	Rosa-Sinensis

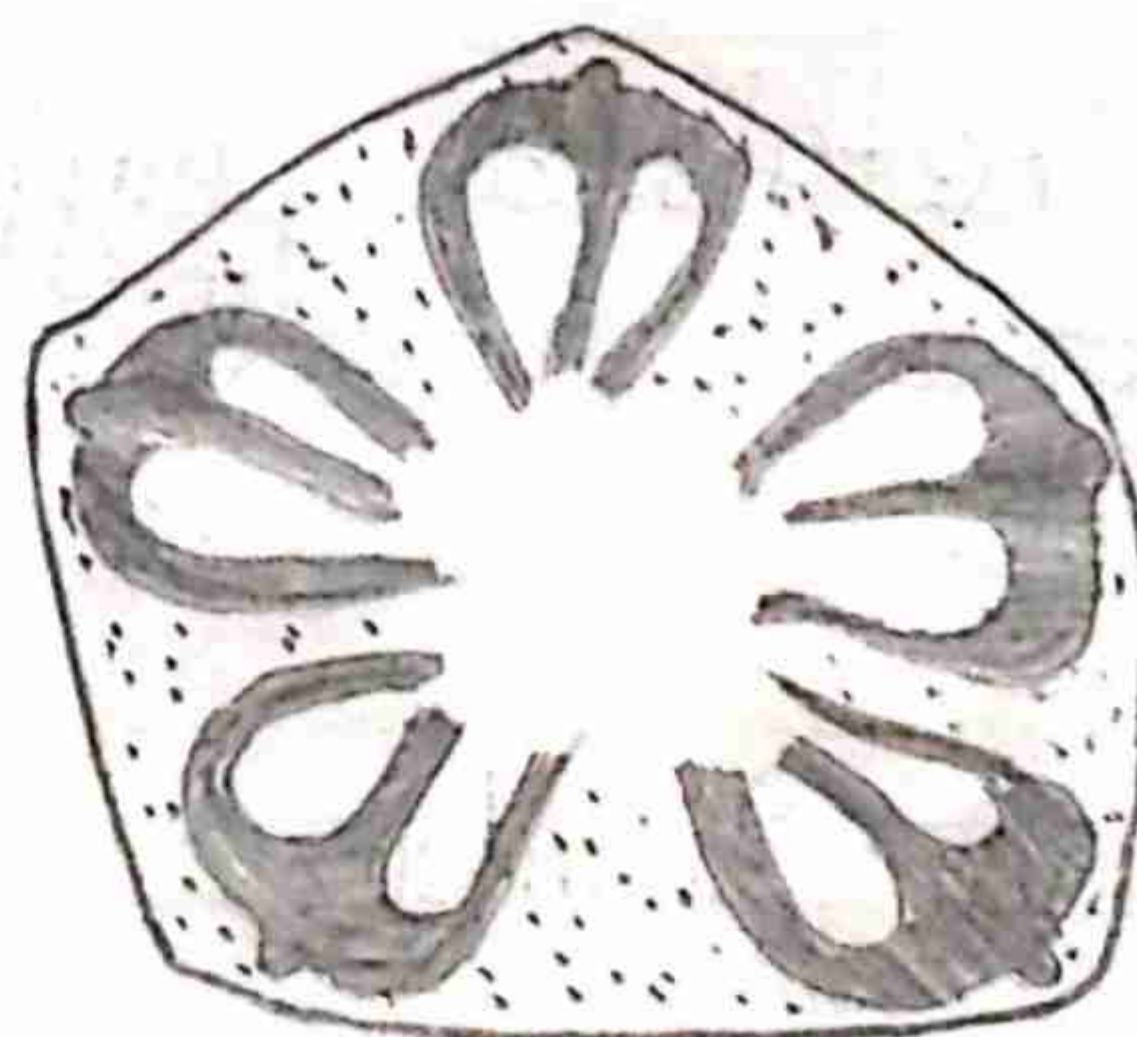
Flower



Vertical section
of flower



Floral Diagram



T.S. ovary

- phous, epipetalous, anthers monothecous, yellow, reniform, exserted, transversely attached to the filament, pollen grains multiporate.

(11) Gynoecium — Pentasambellany, syncarpous, superior, pentalocular, axile placentation, many ovules in each loculus style passing through the staminal tube stigma 5 capitate, covered with velvety growth.

(12) Fruit — Capsule

(13) Seed — Endospermic

(14) Floral formula — $\oplus \quad \text{♀} \quad \text{Epi } 5-7 \text{ K } (5) \text{ C } 5 \text{ A } (2) \text{ G } (5)$

Teacher's Signature :

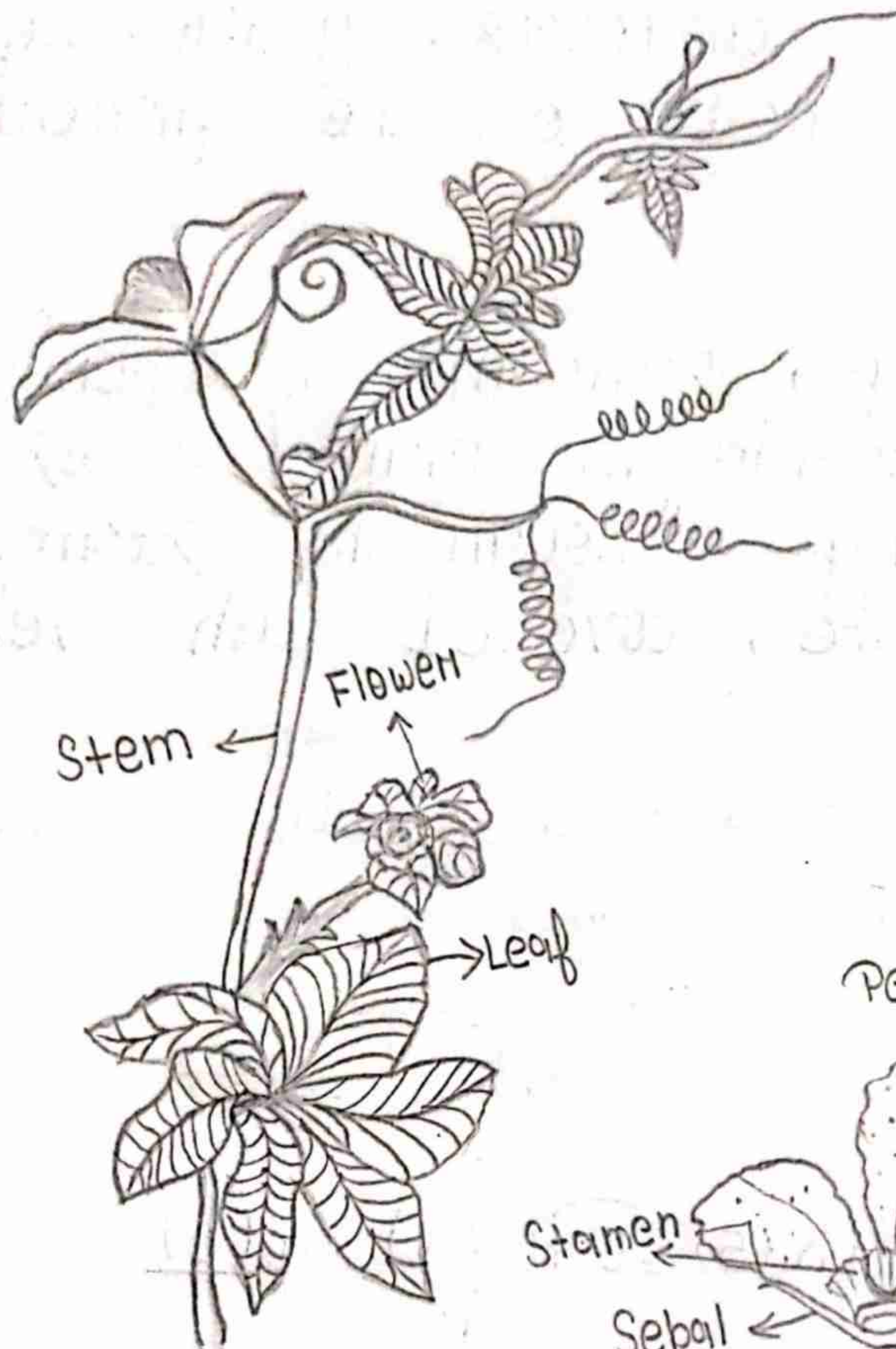
Cucurbitaceae (*Luffa cylindrica* (Ghria Tami))Comment ⇒

- (1) Habit ⇒ A cultivated climber.
- (2) Root — Tap root, branched.
- (3) Stem — Herbaceous, aenial, climbing with the help of simple or branched tendrils, hairy, pentagonal, green.
- (4) Leaf — Cauline and basal, alternate, exstipulate, simple, palmately lobed, lobes denticulate, acute and hairy, multicostate, reticulate.
- (5) Inflorescence — Male flowers borne in raceme clusters on the long hairy peduncle. Female flowers are solitary.
- (6) Flower — Bracteate, incomplete, pedicellate, actinomorphic, unisexual, pentamerous, yellow, male flowers are pistillate.
- (7) Male flower — Calyx: Sepals 5, gamosepalous, campanulate, valvate, green.
- (8) Corolla — Petals 5, gamopetalous or polypetalous, imbricate, inserted on the calyx tube, yellow.
- (9) Androecium — Stamens 5, polyandrous, anthers ditheous,

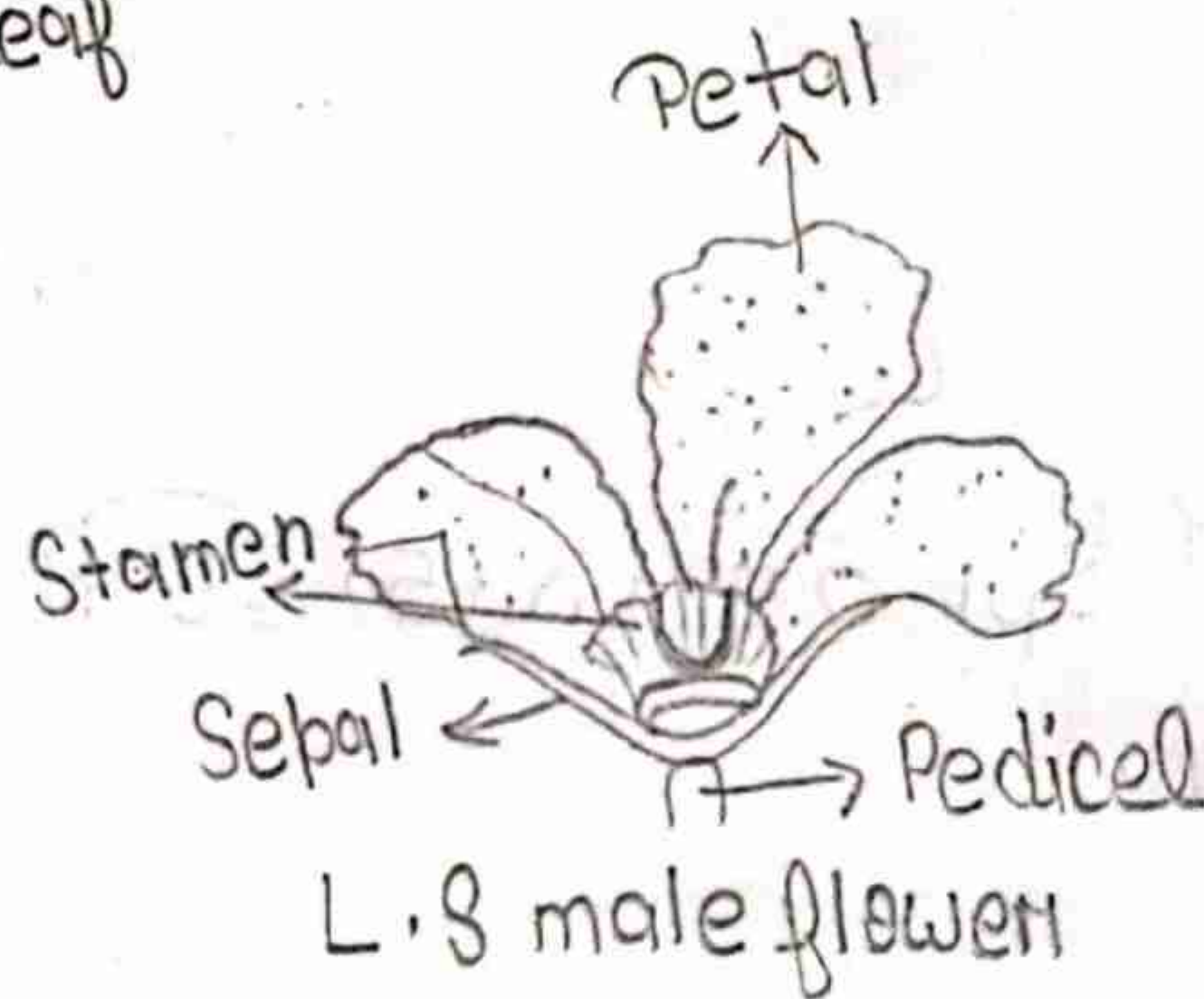
Teacher's Signature :

Systematic position

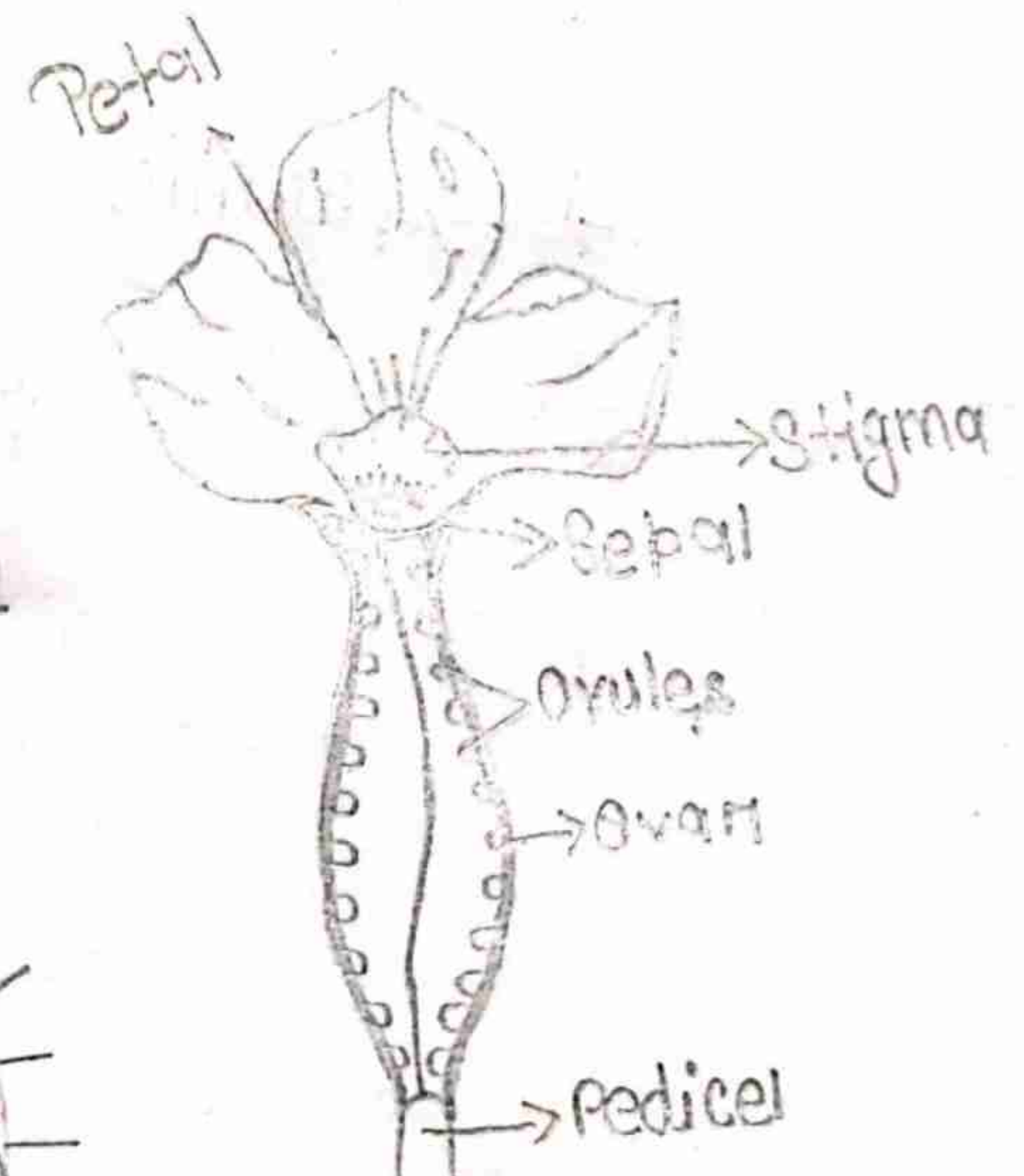
Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-class	—	Polypetales
Series	—	Calyciflorae
Order	—	Passiflorales
Family	—	Cucurbitaceae
Genus	—	Luffa
Species	—	Cylindrica



A flowering twig



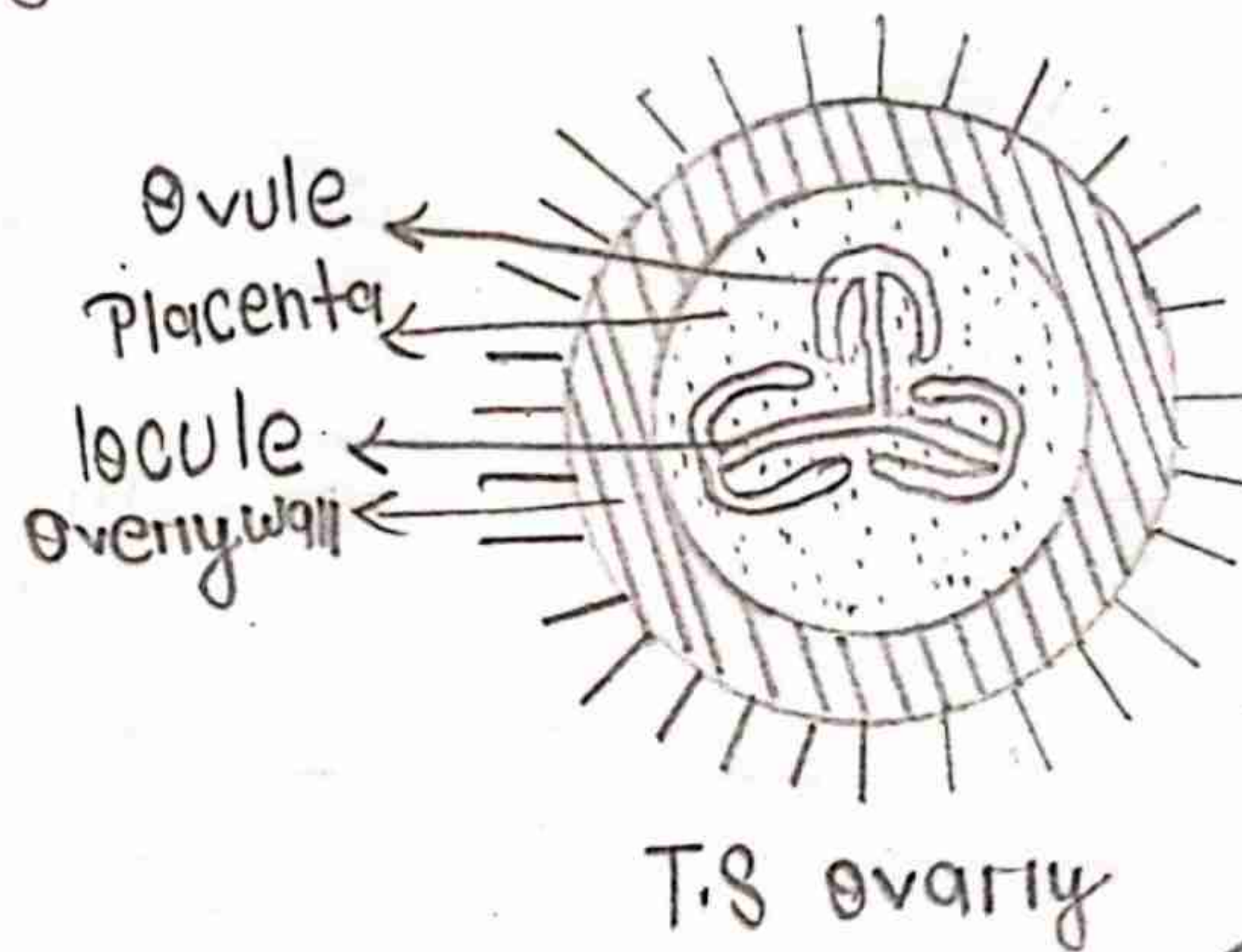
L.S. male flower



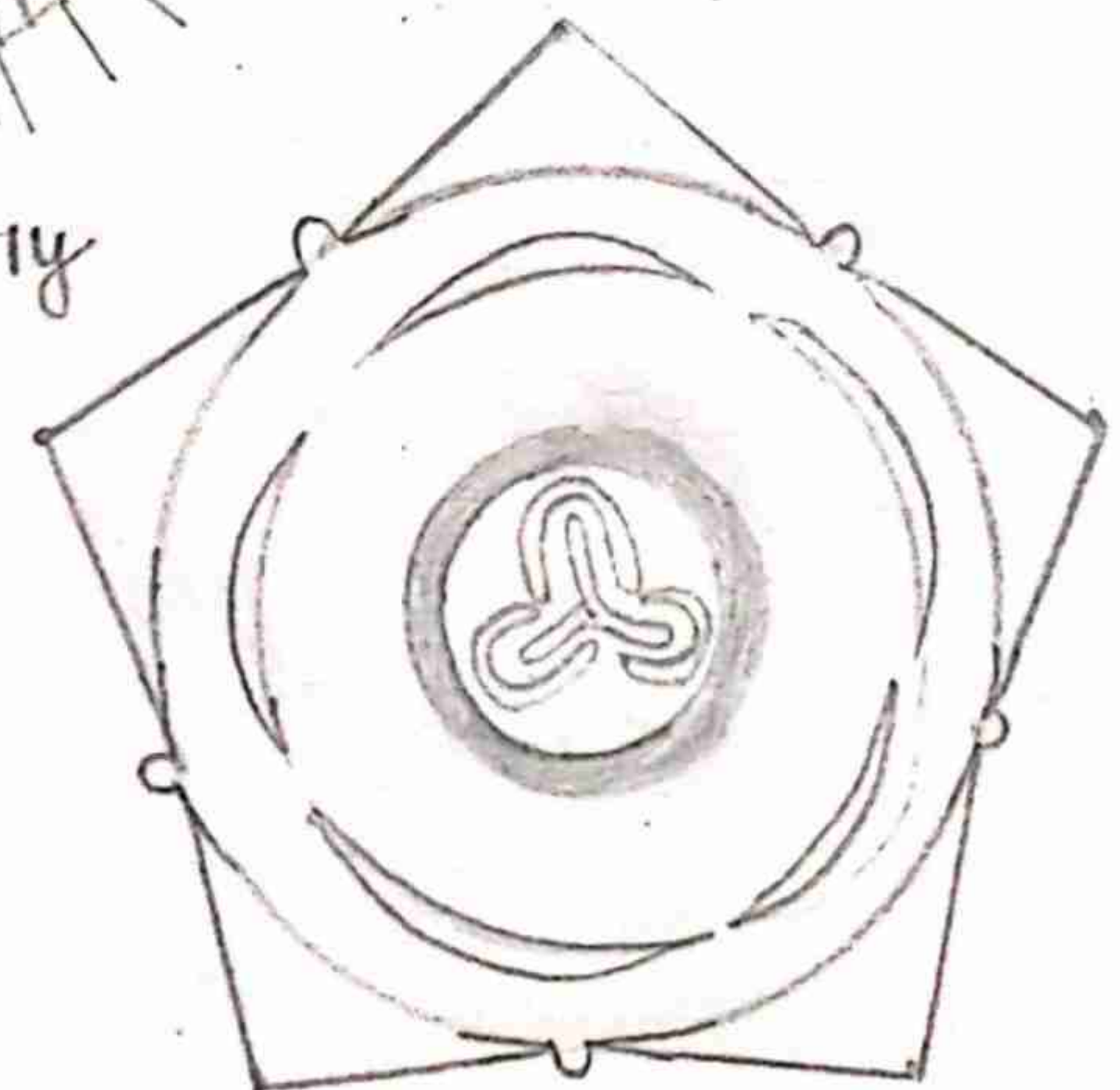
L.S. Female flower



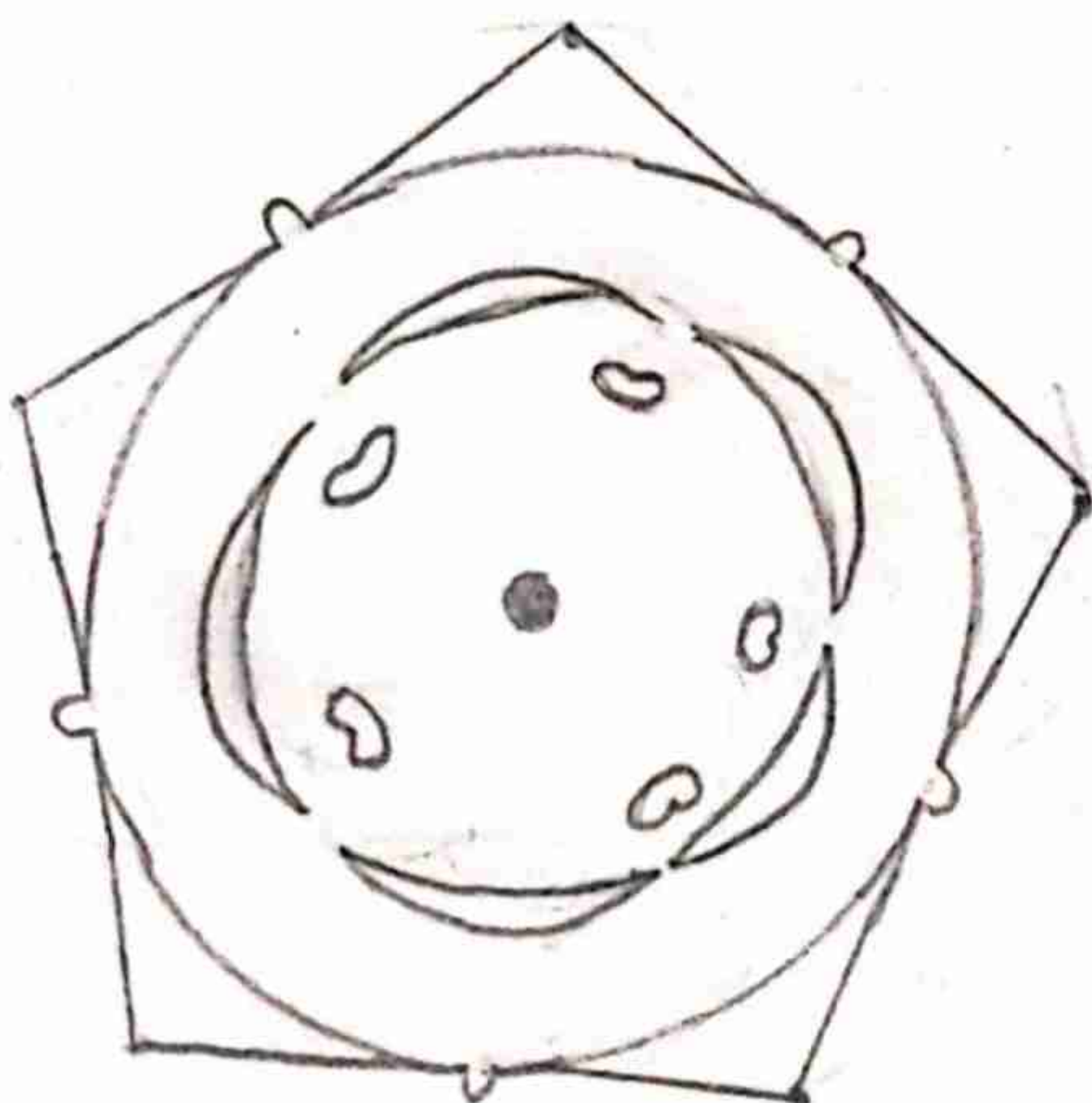
Stamens



T.S. ovary



Floral Diagram
Female Flower



Floral Diagram
Male Flower

basifixed, exserted.

(10) Gynoecium — Absent

(11) Female flower — Calyx: Sepals 5, polysepalous, valvate, connate, persistent.

(12) Corolla — Petals 5, polypetalous, imbricate, connate.

(13) Androecium — Absent,

(14) Gynoecium — Tricarpellary, syncarpous, ovary inferior, unilocular, placentation parietal, style three, stigma trilobed.

(15) Fruit — Peep on an elongated berry.

(16) Seed — Many, non-endospermic.

Floral formula

(a) Male flowers — $BH, \theta, \sigma, K(5), C_5, A_5, G_0$

(b) Female flowers — $BH, \theta \text{ } \bar{\sigma}, K(5), C_5, A_0, \bar{G}(3)$

Teacher's Signature :

Asteraceae (The sunflower family)**Comment** ⇒

- (1) Habit — An annual, cultivated, ornamental herb.
- (2) Root — Branched, tap root, fibrous.
- (3) Stem — Herbaceous, erect, branched, cylindrical, solid, hairy, green.
- (4) Leaf — Cauline and basal, opposite or alternate, exstipulate, simple, ovate, serrate, acute, hairy, uncostate, pecticulate.
- (5) Inflorescence — A head or capitulum consisting of many florets and disc florets, An involucre of bract is present.

[I] Ray floret

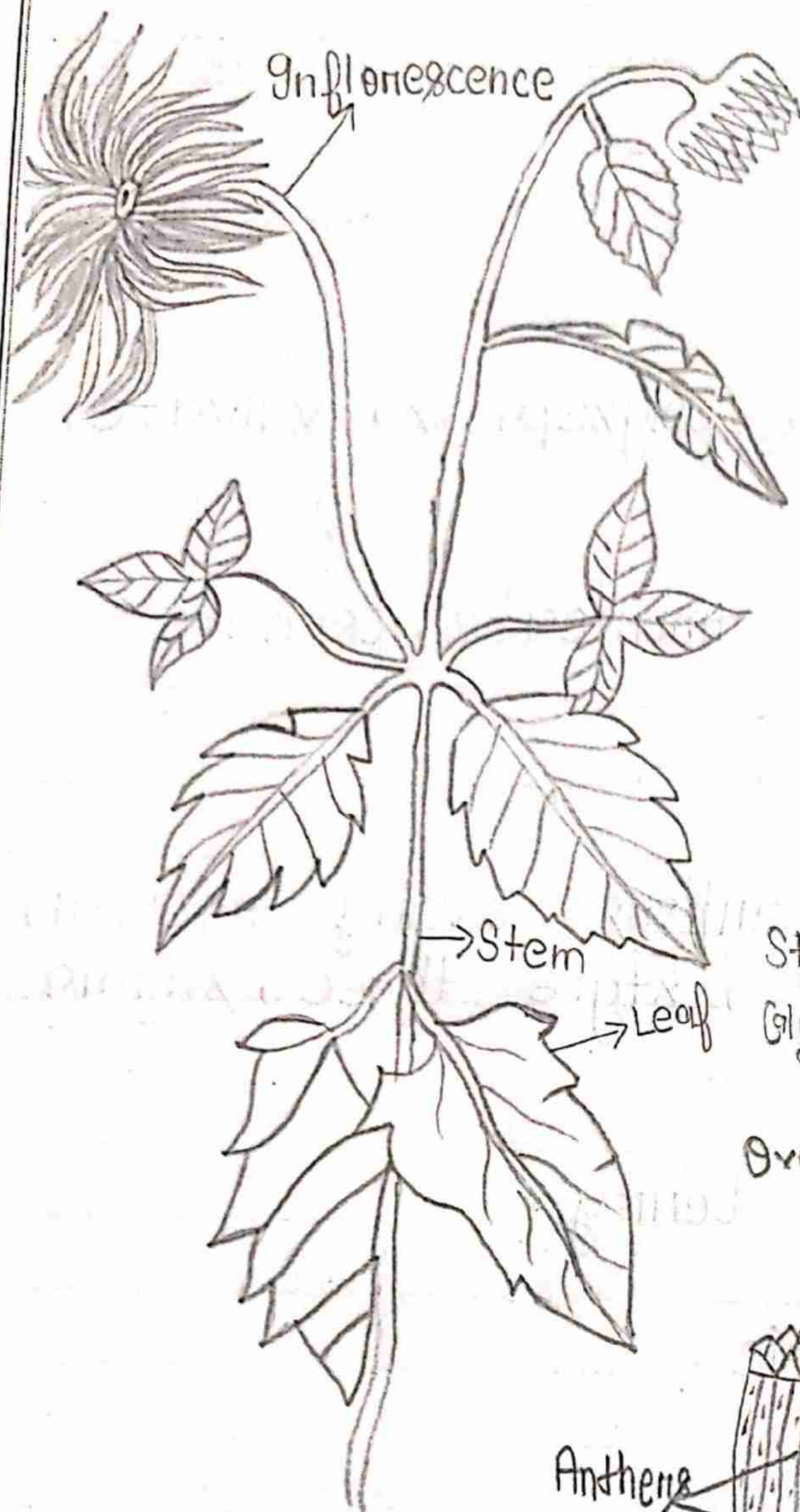
Sessile, incomplete, zygomorphic, unisexual, female on sterile, epigynous, ligulate, present outside.

- (6) Calyx — Sepals 2, anterior - posteriorly situated, reduced to pappus or absent.
- (7) Corolla — Petals 5, gamopetalous, valvate ligulate, 0/5.
- (8) Androecium — Absent.

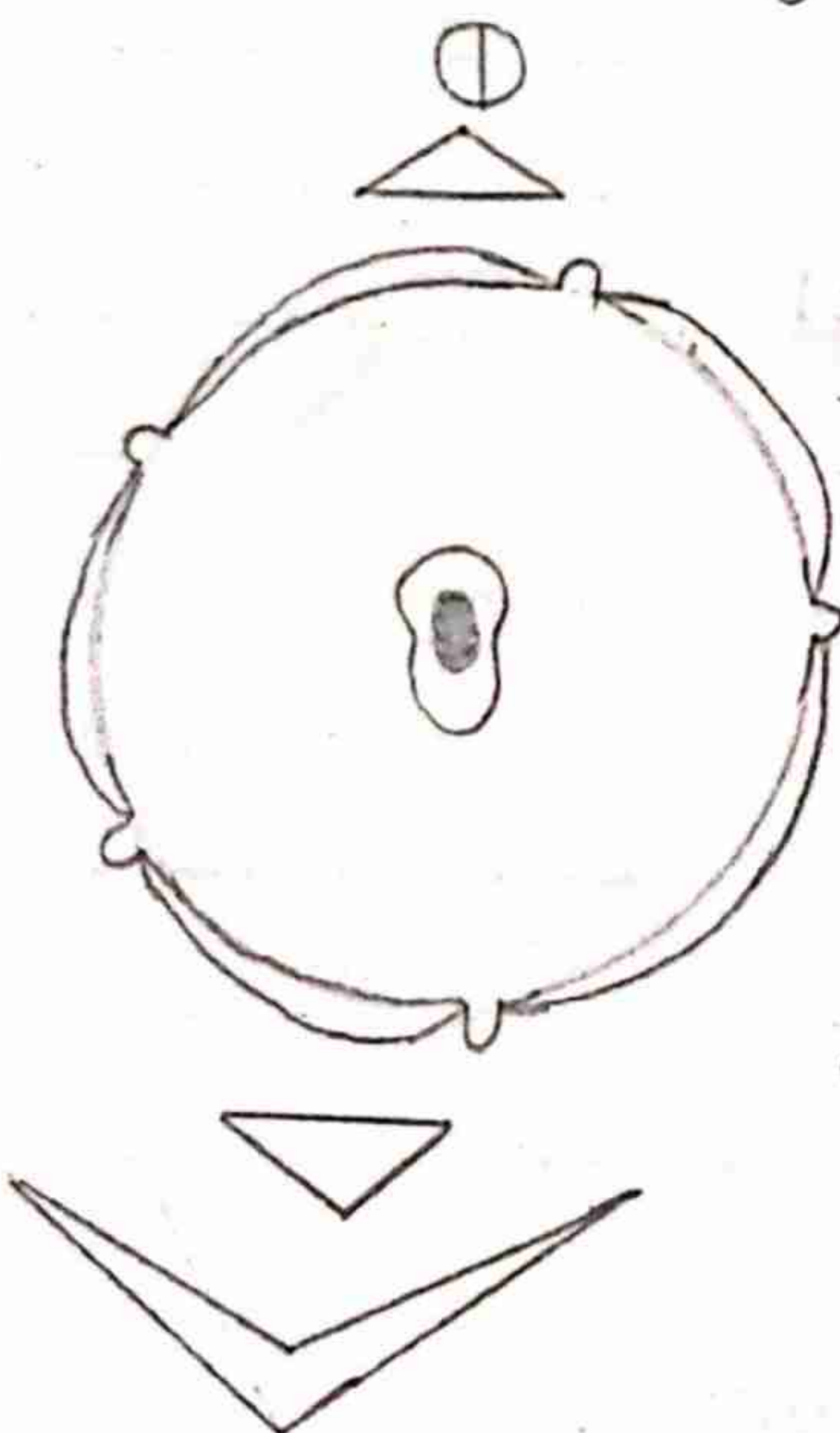
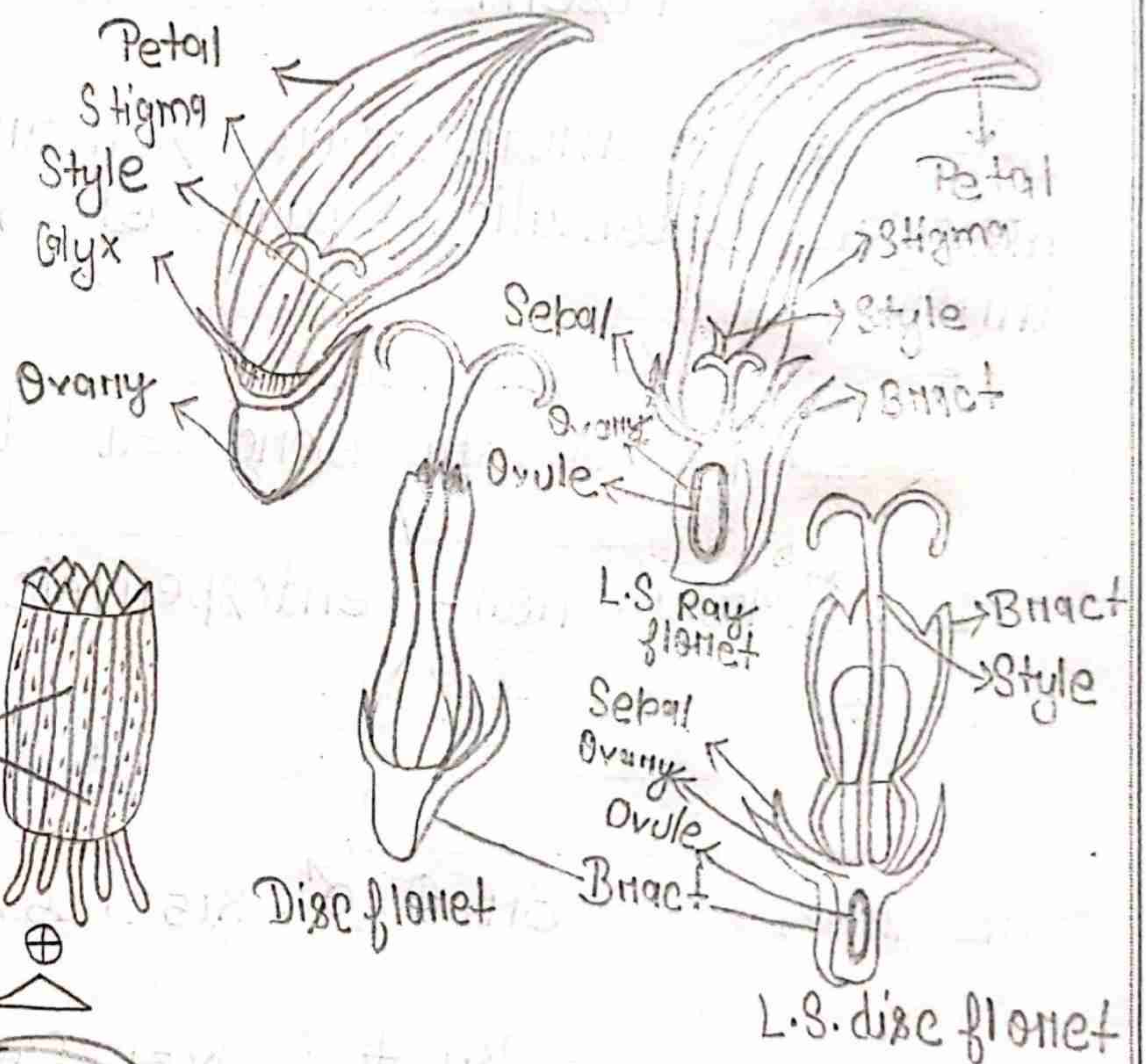
Teacher's Signature :

Systematic position

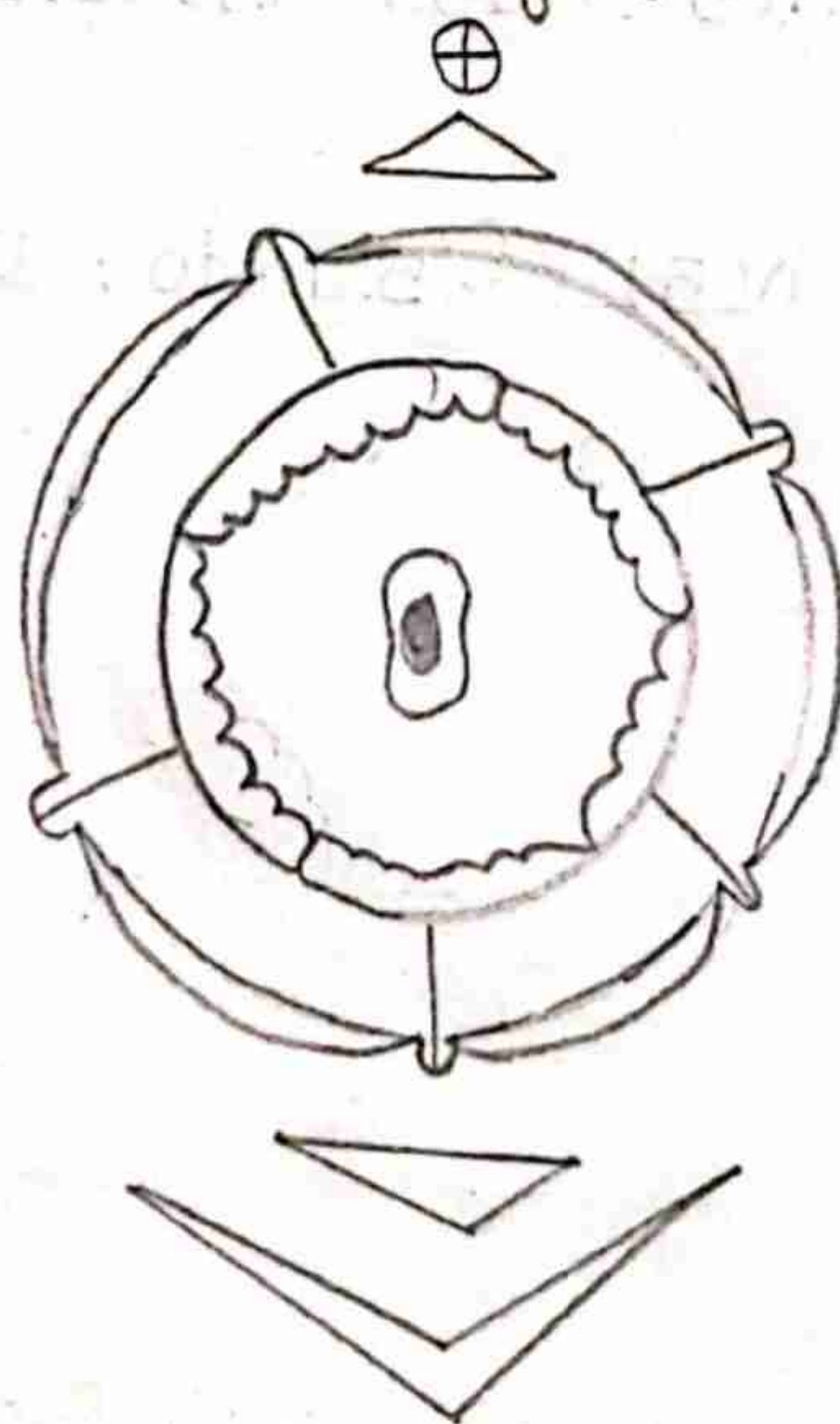
Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-class	—	Gamopetalae
Series	—	Inferrae
Order	—	Asterales
Family	—	Asteraceae
Genus	—	Helianthus
Species	—	Annuus



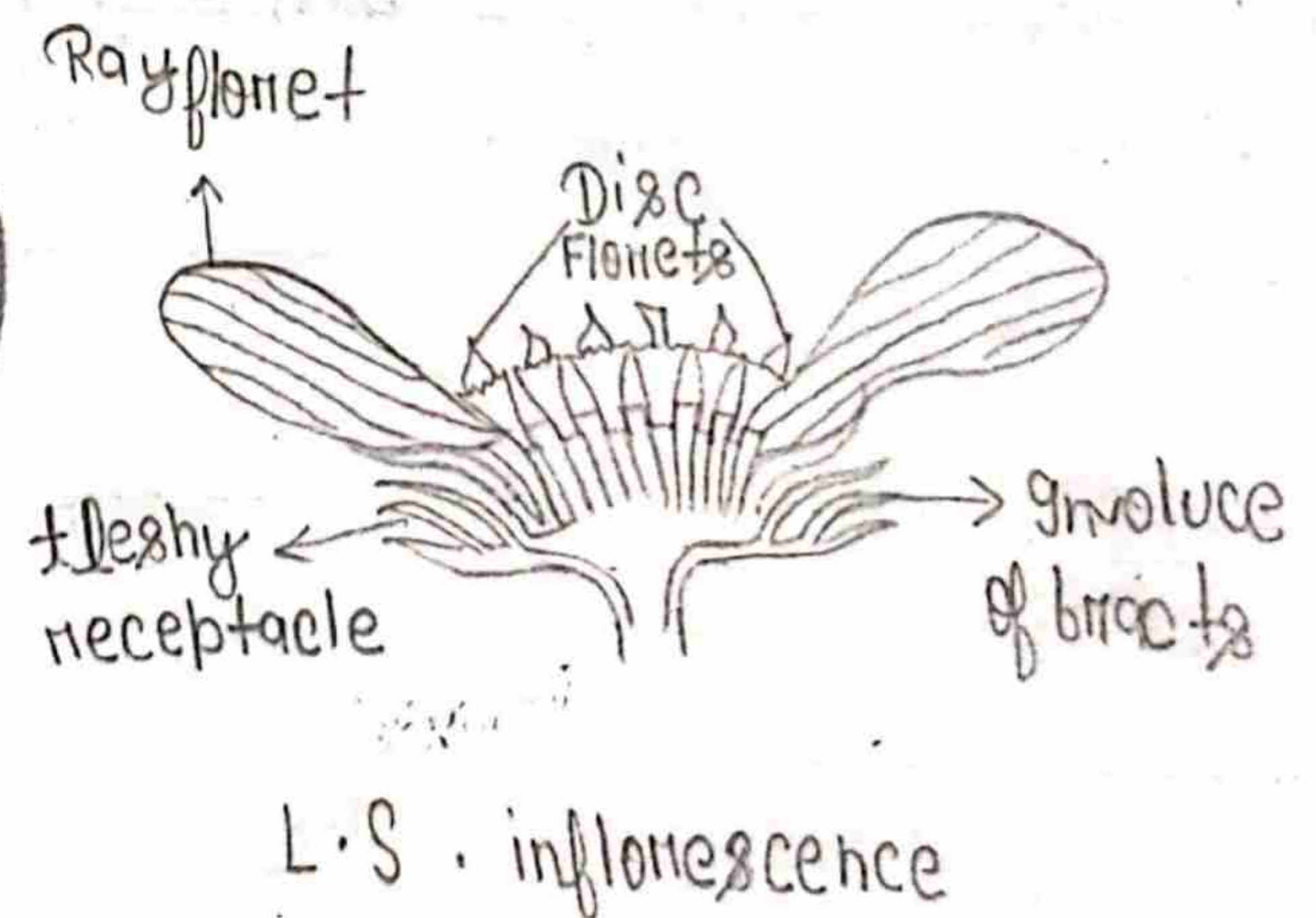
A flower twig



Floral Diagram
Ray Floret



Floral Diagram
Disc Floret



L.S. inflorescence

- (9) Gynoecium — Absent, if present then it is bicarpellary, syncarpous, ovary inferior, one chambered, basal placentation, style short - stigma bifid.
- (10) Fruit — Cypselia.
- (11) Seed — Non - endospermic.
- (12) Floral formula — $B_{11}, \ominus, \text{♀}, K_2(\text{pap}), C_{(10/5)}, A_0, \overline{G}_{12} \text{ or } G_{10}$

II Disc flower

Bracteate, sessile, complete, actinomorphic, bisexual, pentamerous, epigynous, present in the centre.

- (13) Calyx — Sepals 2, reduced to paprus, anterior posteriorly situated.
- (14) Corolla — Petals 5, gamopetalous, valvate, tubular.
- (15) Androecium — Stamens 5, synergous, anthers fused to form a tube around the style, epipetalous, dithecal, basifixed, introrse.
- (16) Gynoecium — Bicarpellary, syncarpous, ovary inferior, one chambered, basal placentation, style short, stigma bifid.
- (17) Fruit — Cypselia.

Teacher's Signature :

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(18) Seed — Non — endospermic.

(19) Floral formula — $B_{11}, \oplus, \overset{\uparrow}{\underset{\downarrow}{\text{♀}}}, K_2(\text{Pappus}), \overline{C(5)}, \overline{A_5}, \overline{G_2}$.

Teacher's Signature :

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Solanaceae (*Solanum nigrum* (Makoi))

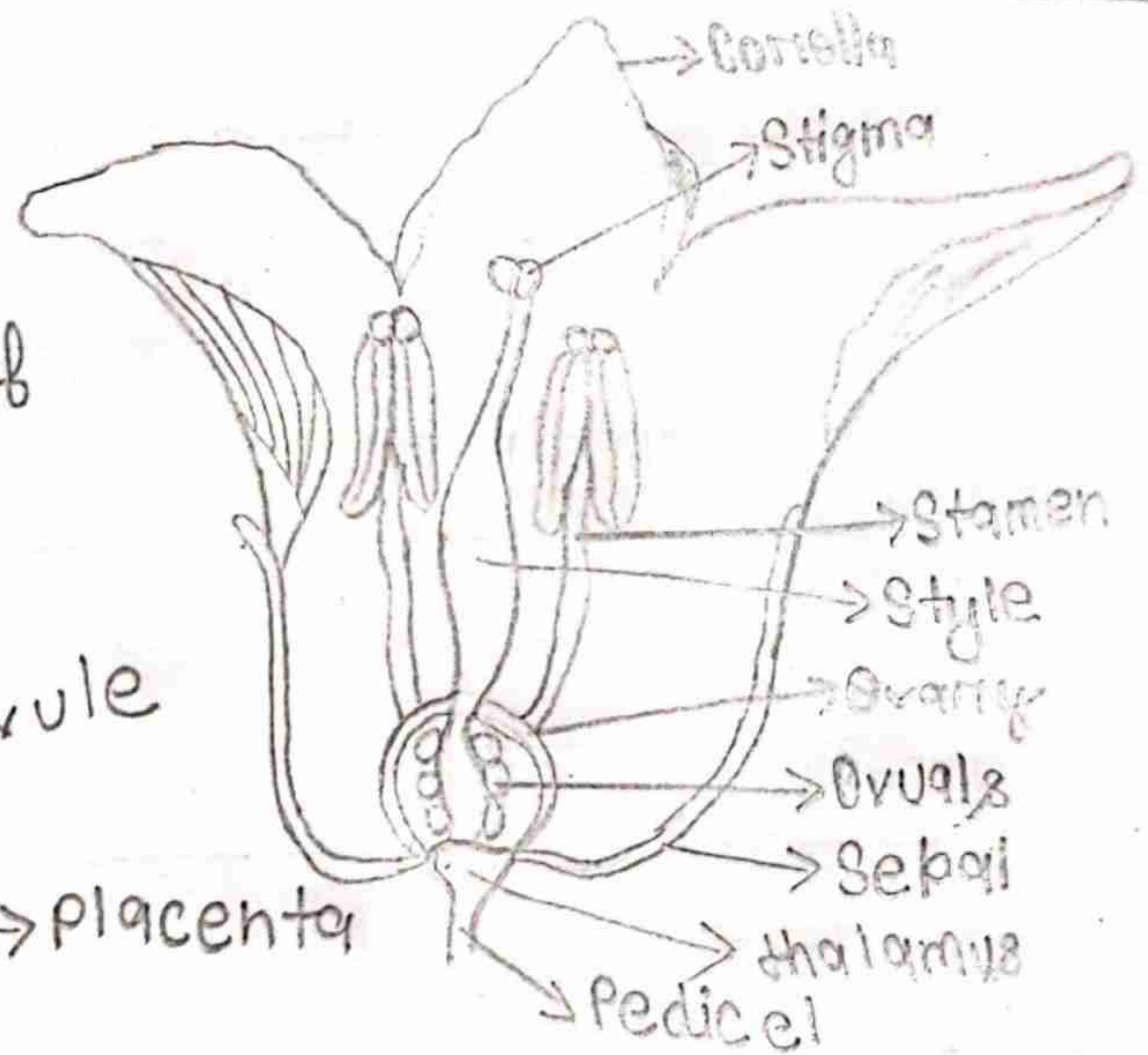
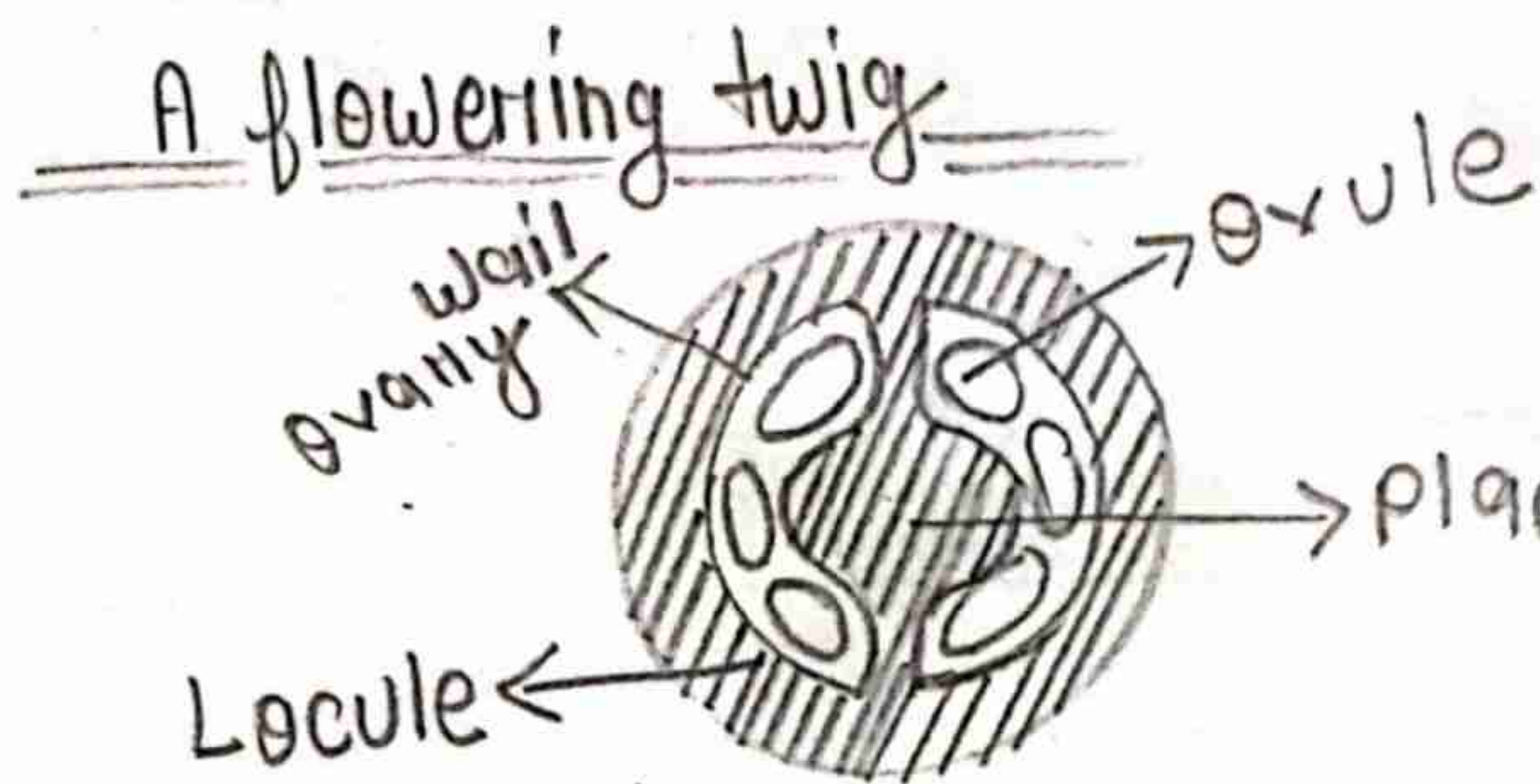
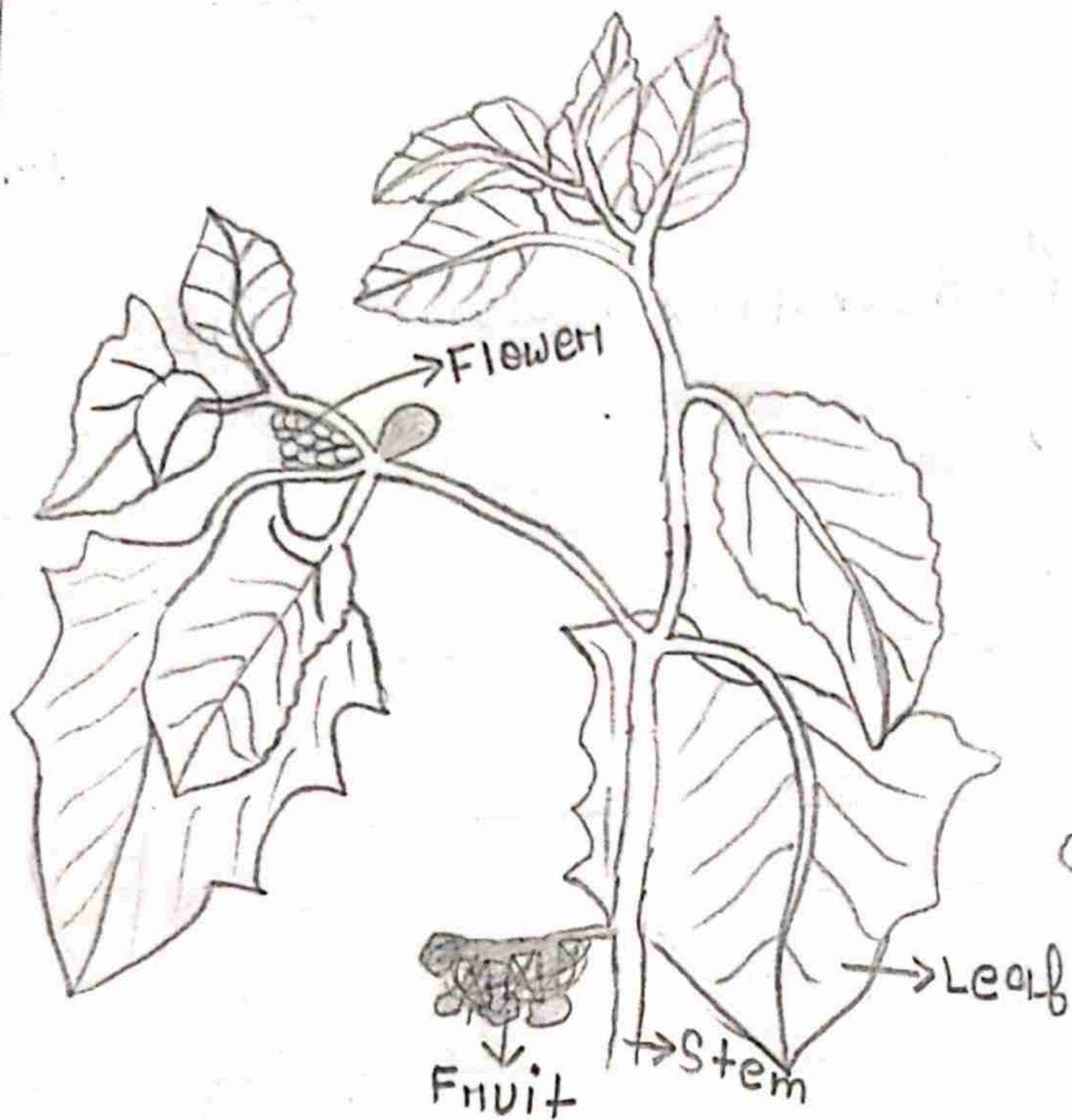
Comment ⇒

- (1) Habit — A small, annual herb attaining a height of 1 - 3 feet.
- (2) Root — Branched, tap root.
- (3) Stem — Herbaceous, aerial, erect, cylindrical, branched, solid, smooth or puberulous, green.
- (4) Leaf — Cauline and basal, alternate, opposite in floral region, exstipulate, simple, petiolate, ovate, entire, ovate to rhomboidal, acute, dentate, glabrous, unispirate, reticulate.
- (5) Inflorescence — Extra axillary cyme.
- (6) Flower — Embosteat, embosteatate, pedicellate, complete, hemimorphodite, actinomorphic, pentamerous, hypogynous.
- (7) Calyx — Sepals 5, gamosepalous, valvate, persistent, green.
- (8) Corolla — Petals 5, gamopetalous, valvate, white, notate.
- (9) Androecium — Stamens 5, polyandrous, epipetalous, anthers dithecal, basifixed and dehisce by apical pores.

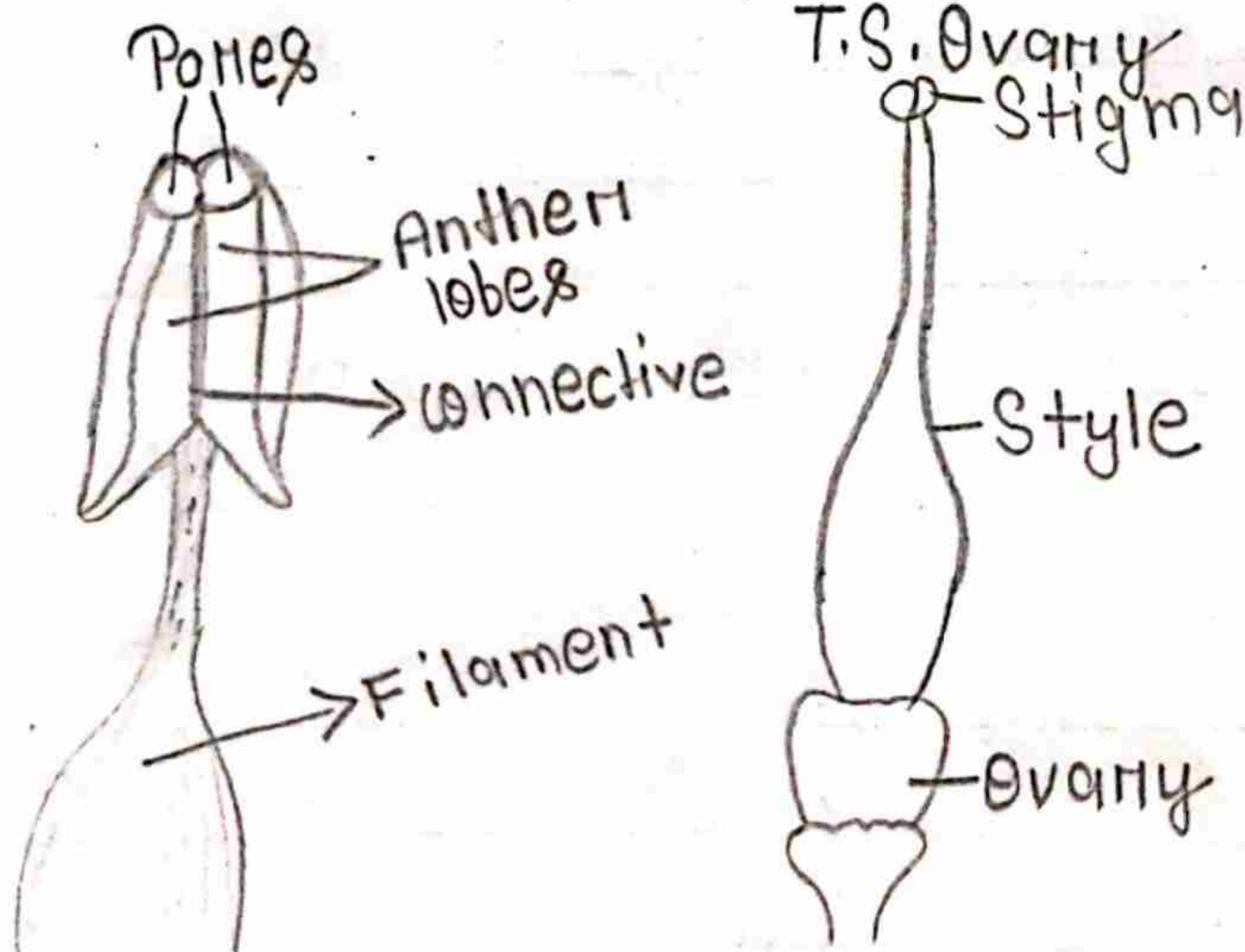
Teacher's Signature :

Systematic position

Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-class	—	Gamopetalae
Series	—	Bicarpellate
Order	—	Polemoniales
Family	—	Solanaceae
Genus	—	Solanum
Species	—	Nigrum

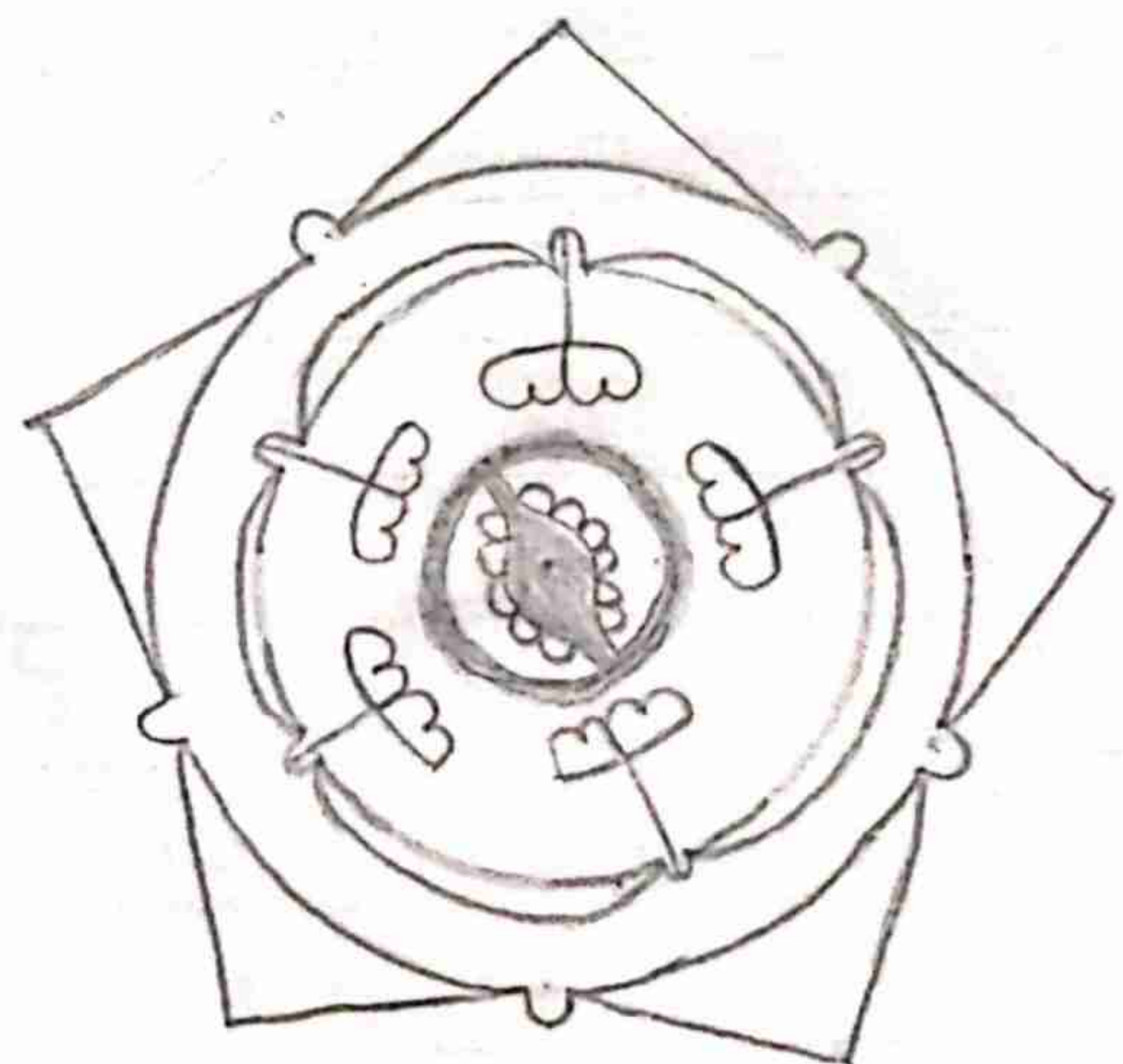


L.S. Flower



Stamen

Gynoecium



Floral Diagram

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- (10) Gynoecium — Bicarpellary, syncarpous, ovary superior, bilocular with many ovules in each locule, placentation axile, septum oblique, style long and hairy, stigma bilobed, placentae highly swollen.
- (11) Fruit — A berry.
- (12) Seed — Many, small, endospermic.
- (13) Floral formula — $E_{br}, \emptyset, \overset{\uparrow}{\underset{\downarrow}{\text{♀}}}, K_{(5)}, \overline{C_{(5)}}, A_5, \underline{G_{(2)}}$

Teacher's Signature :

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Lamiaceae (*Ocimum sanctum*) (Tulsi)

Comment $\Rightarrow$

(1) Habit — A cultivated, aromatic, tall herb.

(2) Root — Branched, tap root.

(3) Stem — Herbaceous, aerial, erect, quadrangular, branched, solid, pubescent, green.

(4) Leaf — Cauline and basal, opposite, decussate, exstipulate, simple, petiolate, ovate, serrate, acute, pubescent, aromatic, uniserrate, reticulate.

(5) Inflorescence — Verticillaster.

(6) Flower — Bracteate, pedicellate, complete, zygomorphic, hermaphrodite, pentamerous, hypogynous and cyclic.

(7) Calyx — Sepals, gamosepalous, calyx $1/4$ bilabiate, valvate, persistent.

(8) Corolla — Petals 5, gamopetalous, corolla $4/1$ bilabiate, valvate.

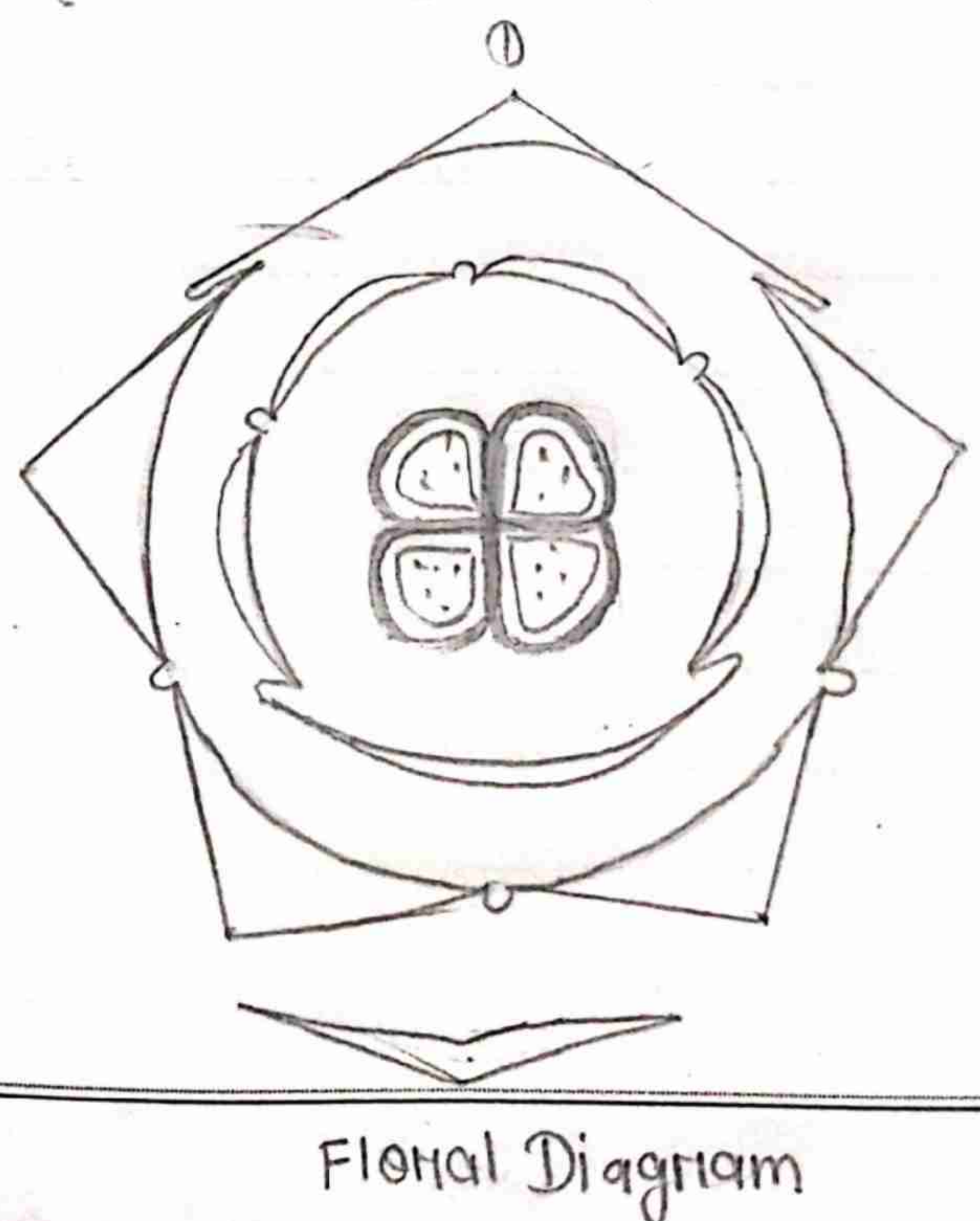
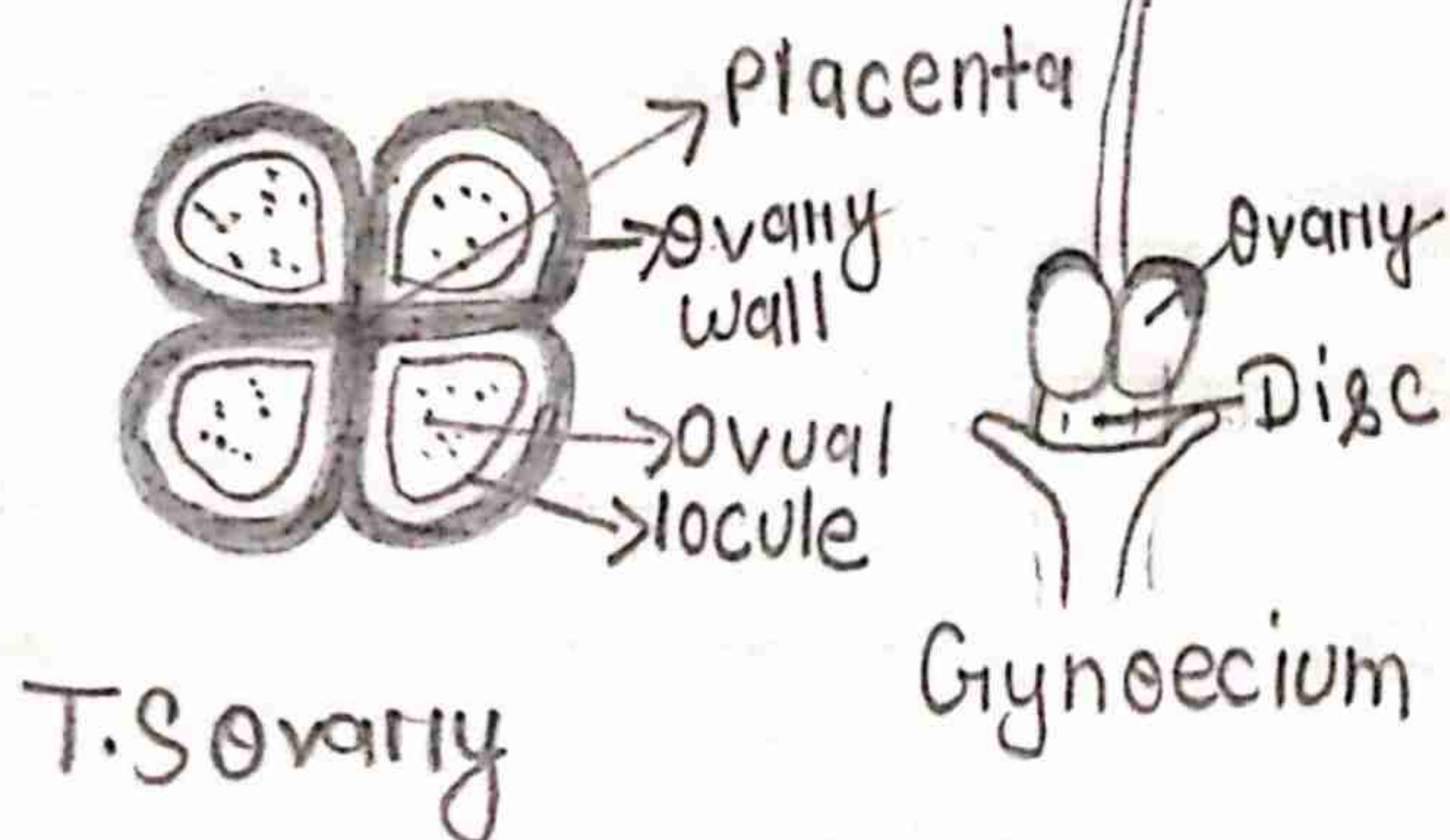
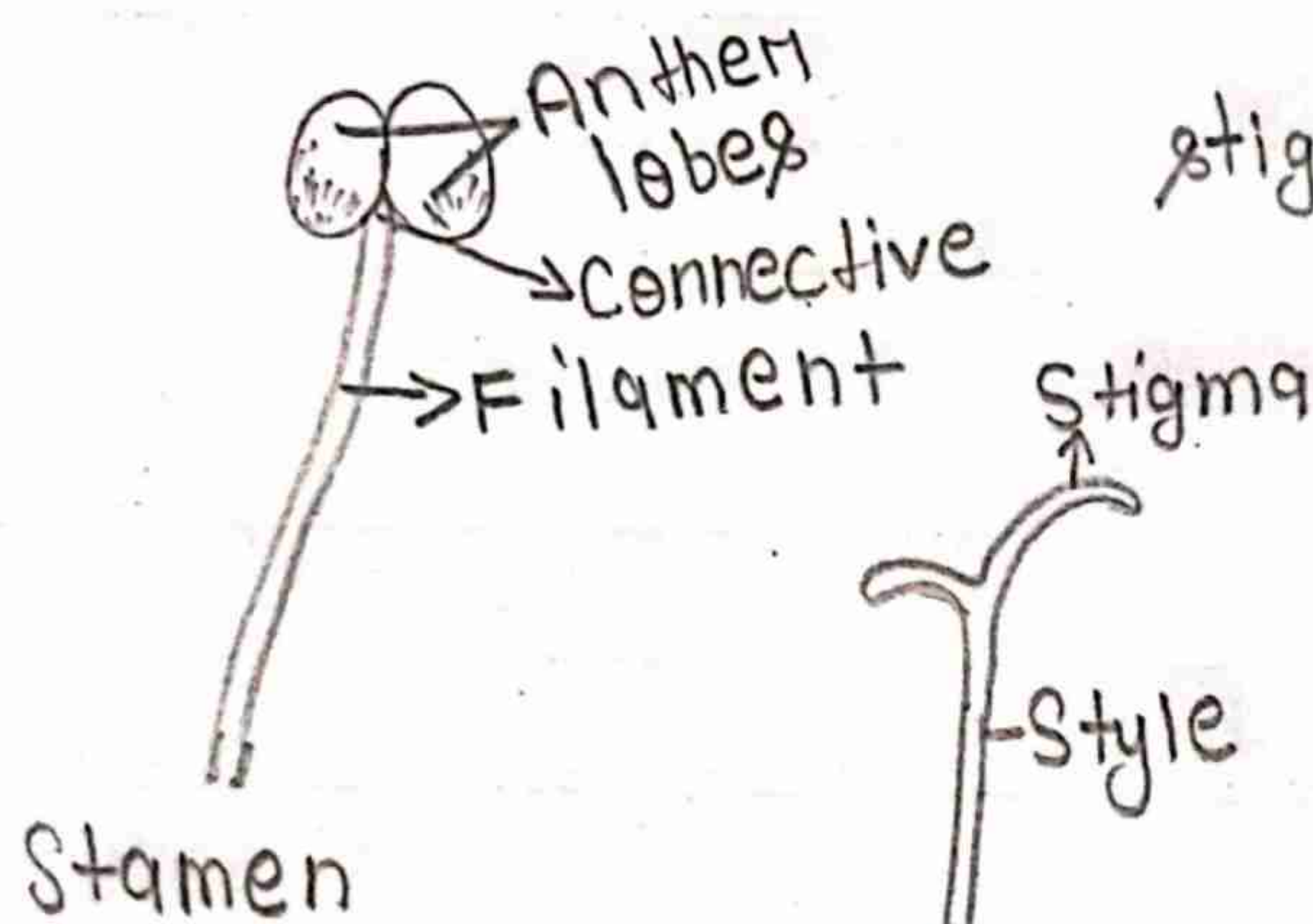
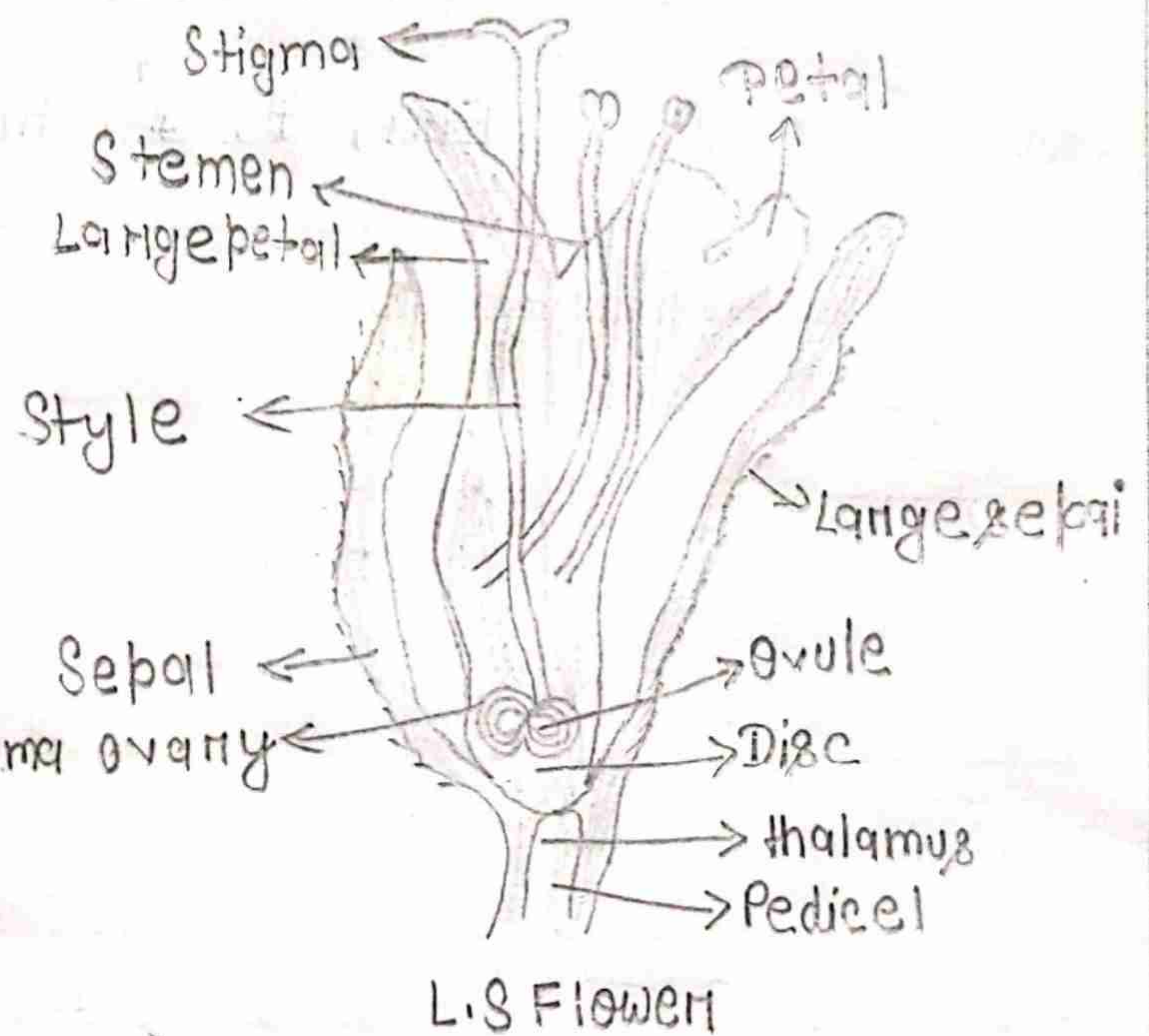
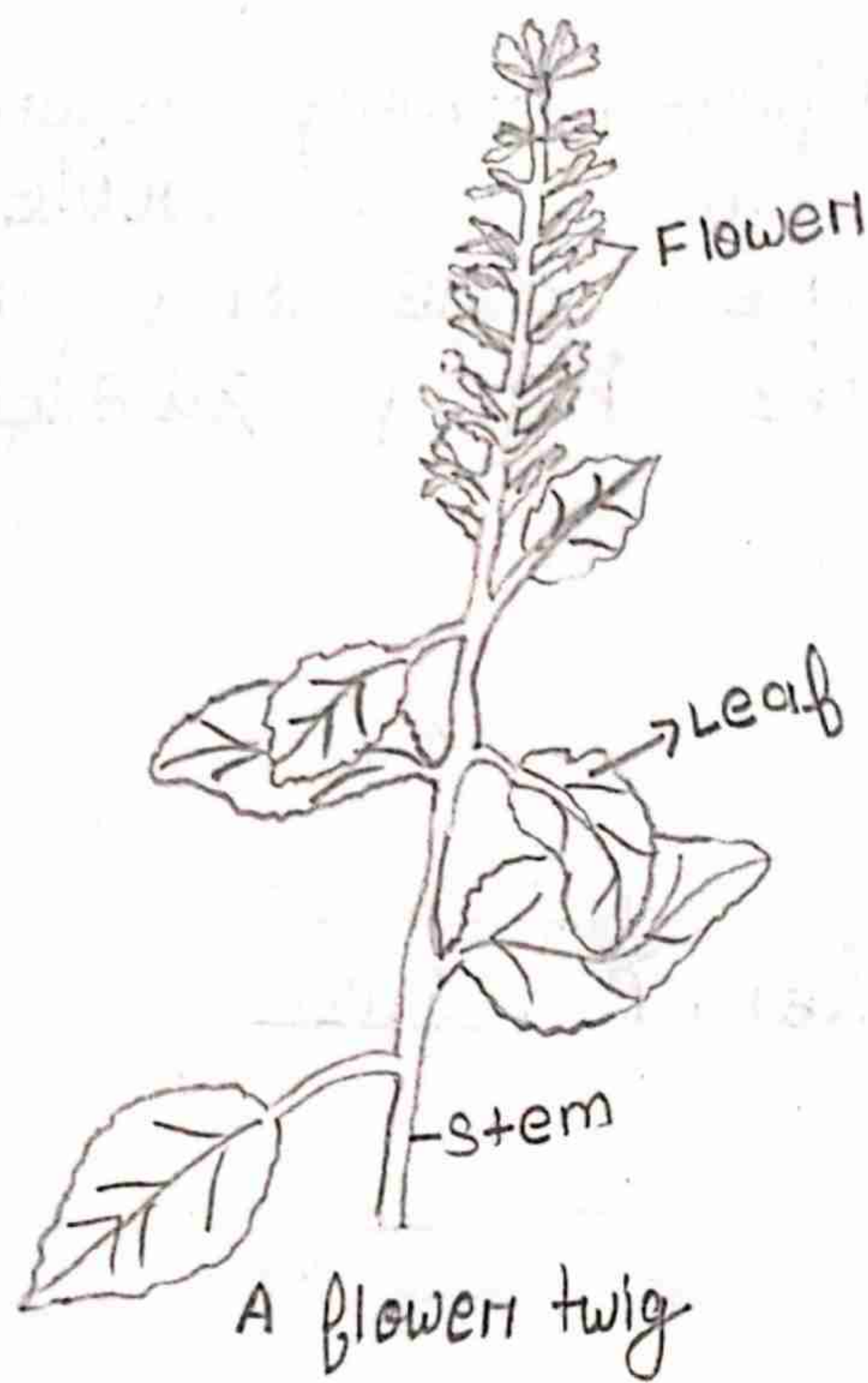
(9) Androecium — Stamens 4, polyandrous, epipetalous, didynamous, dithecal, dorsifixed, introrse.

(10) Gynoecium — Bicarpellary, syncarpous, ovary superior,

Teacher's Signature :

Systematic position

Division —	Angiosperms
Class —	Dicotyledona
Sub-class —	Gramopetalae
Series —	Bicarpellatae
Order —	Lamiales
Family —	Lamiaceae
Genus —	Ocimum
Species —	Sanctum



Placentation axile, tetralocular with one ovule in each locule, style gynobasic and stigma bifid, a disc is present below the ovary.

(11) Fruit — Schizocarpic (samaras), made up of four nutlets.

(12) Seed — Four non — endospermic.

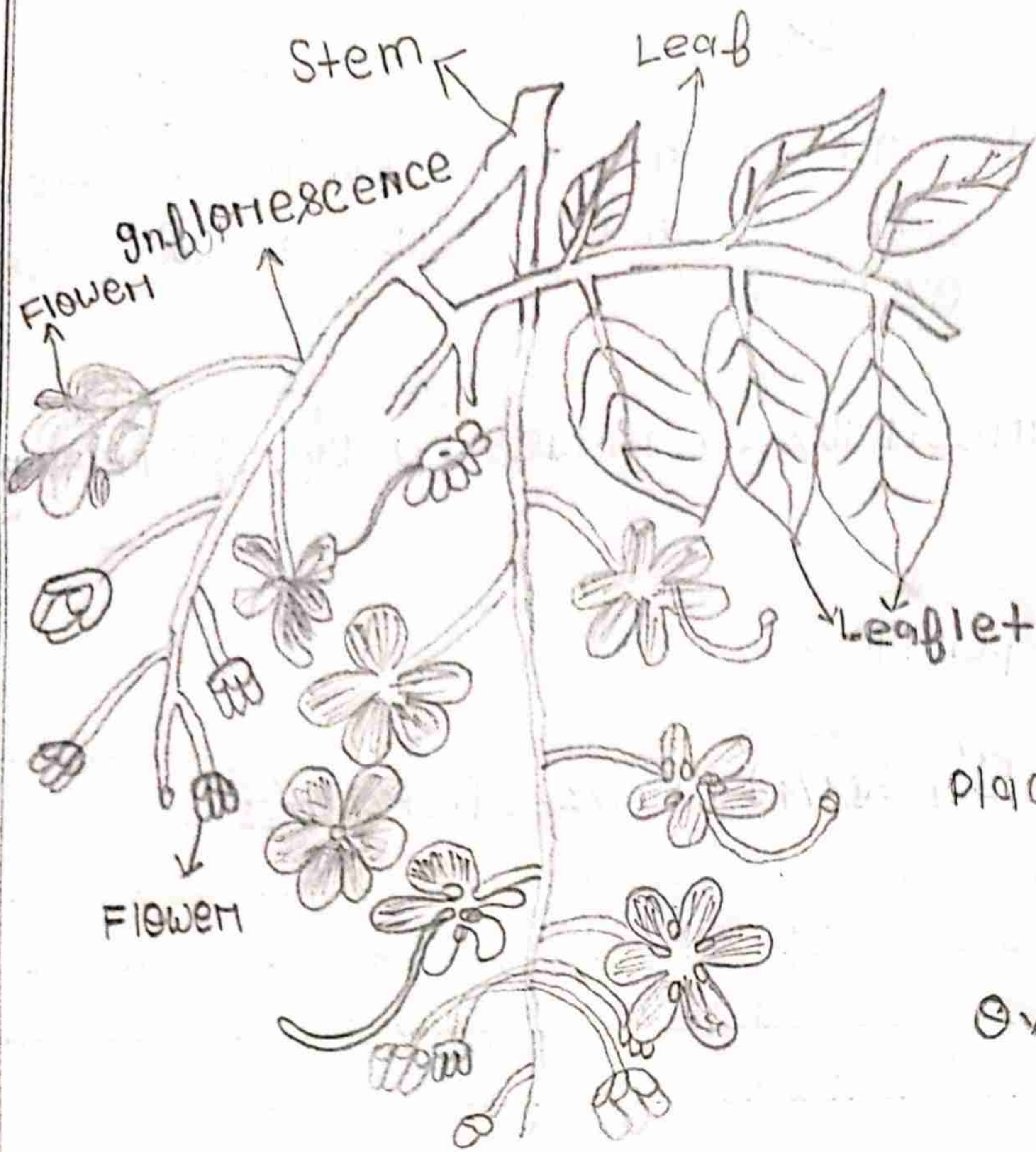
(13) Floral formula — $B_n, \oplus, \text{♀}, K(1/4), \overline{C(4/1)}, A_{2+2}, \underline{G(2)}$

Teacher's Signature :

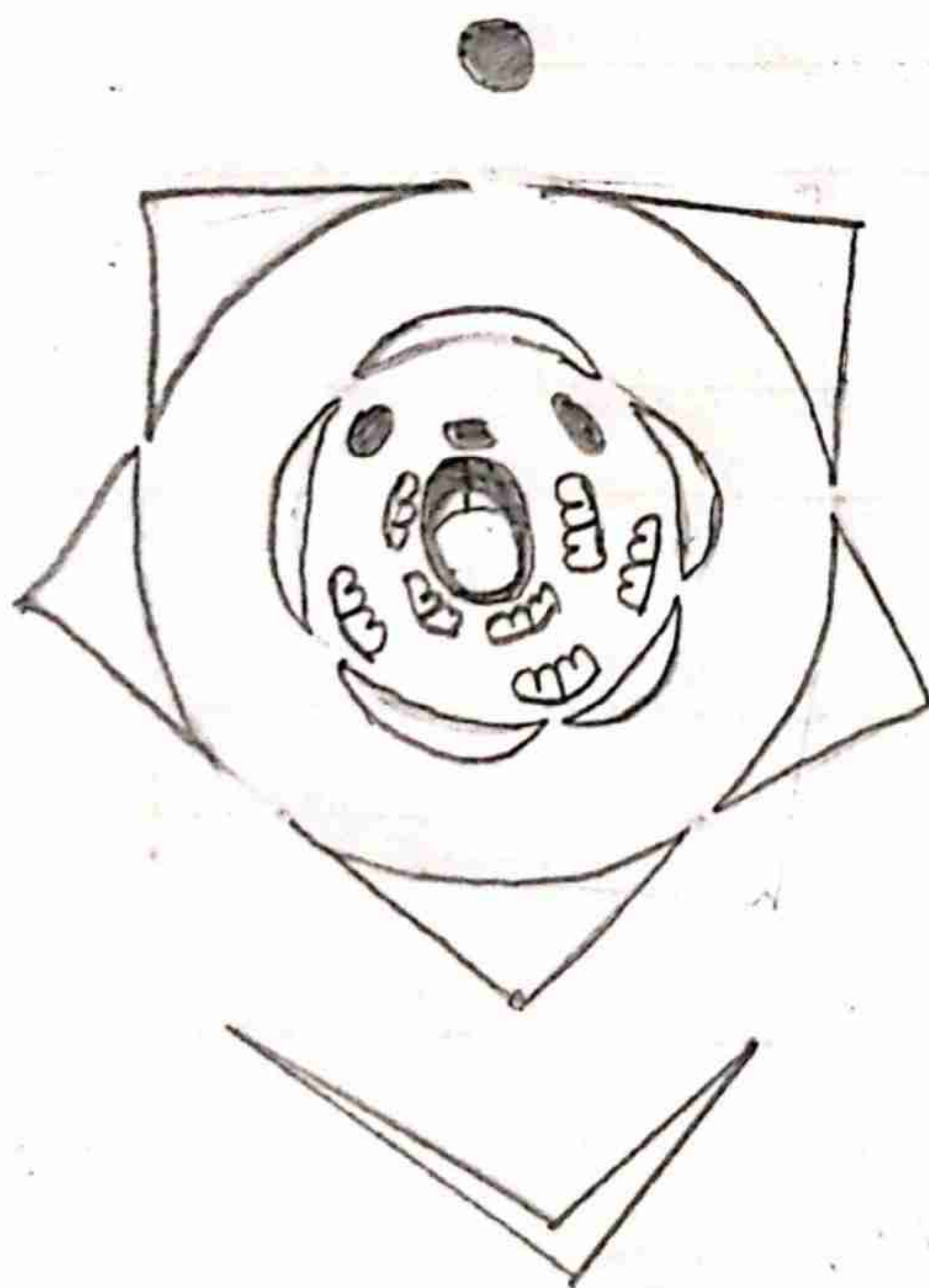
FabaceaeComment ⇒

- (1) Habit — Fabaceae family contains shrub, trees and many annual and perennial herbaceous plants.
- (2) Root — Dicotyledons, taproot with root nodules.
- (3) Stem — Erect or climber, fabaceae includes shrubs, herbs, trees and majority climbers.
- (4) Leaf — Petiolate, pinnately compound or simple, pulvinus leaf base, stipulate, reticulate venation.
- (5) Inflorescence — Racemose.
- (6) Flower — Complete, bisexual, zygomorphic, hypogynous, bracteate / ebracteate.
- (7) Calyx — Sepals 5, gamosepalous, valvate or imbricate aestivation.
- (8) Corolla — Petals 5, polypetalous, papilionaceous, vexillary aestivation.
- (9) Androecium ⇒ Ten stamens (9+1) diadelphous, anther dithe-cous.

Teacher's Signature :



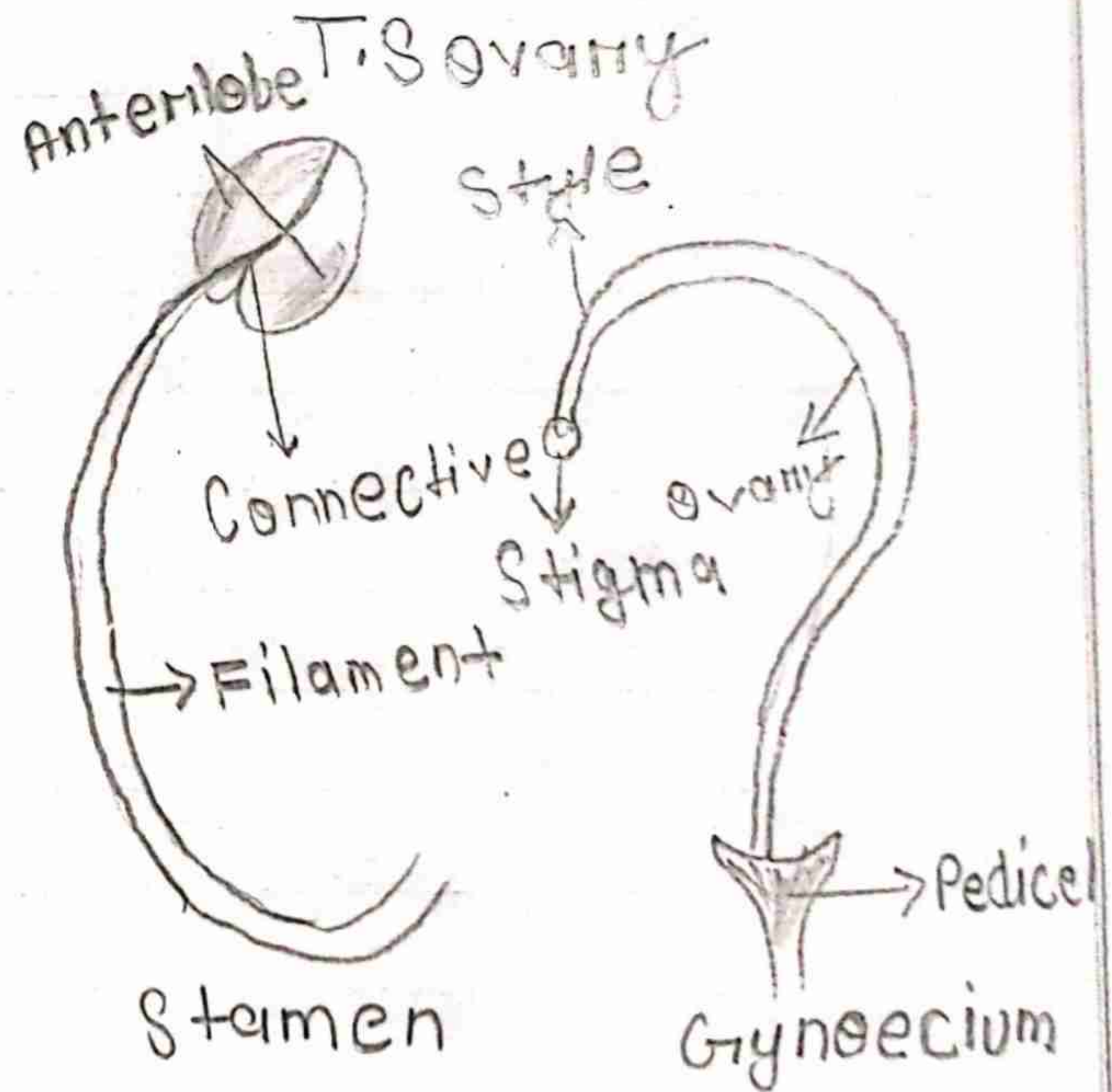
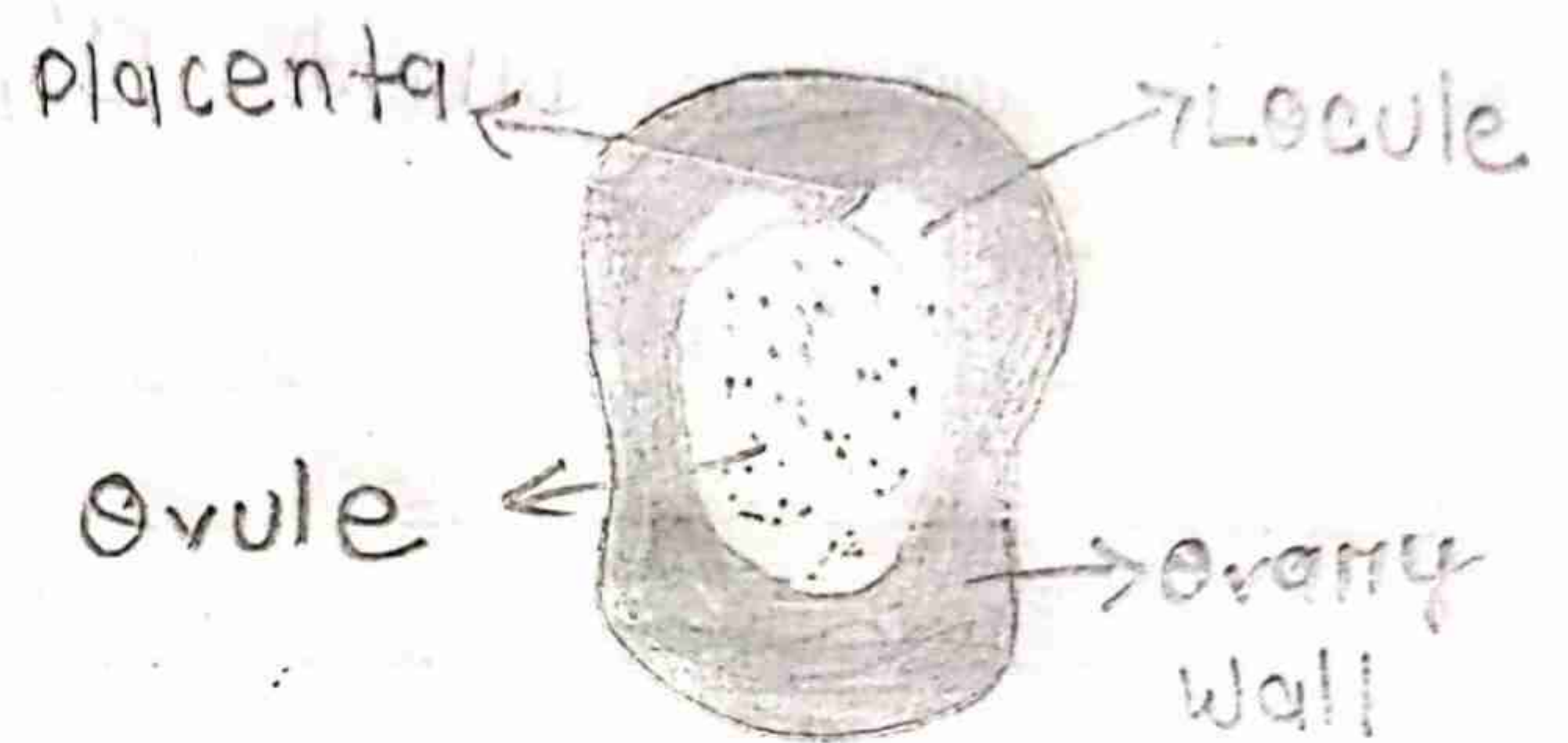
Flowering twig



Flower Diagram

Systematic position

Division — Magnoliophyta
 Class — Magnoliopsida
 Subclass — Rosidae
 Order — Fabales
 Family — Fabaceae
 Genus — Pisum
 Species — Pisum sativum



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(10) Gynoecium — Superior ovary, monospermatophyte, unilocular, single, short-styled and flat, hairy-stigma.

(11) Fruit — Legume.

(12) Seed — One on one, non-endospermic.

(13) Floral formula — $\% \text{ } \text{K}(5), \text{C}_{1+2+(2)}, \text{A}_{(9)+1}, \text{G}_{11}$.

Teacher's Signature :

Rubiaceae (Lxonia coccinea)Comment →

(1) Habit — A small shrub.

(2) Root — Branched, tap root.

(3) Stem — Herbaceous, erect, branched, cylindrical, differentiating into nodes and internodes, green.

(4) Leaf — Cauline and basal, opposite decussate, stipulate, stipule interpetiolar, simple, sessile, elliptical, entire, acute, glabrous, uniserrate, reticulate, green.

(5) Inflorescence — Terminal, dichotomously branched cyme.

(6) Flower — Bracteate, bracteolate, pedicellate, complete, actinomorphic, hemiphradite, tetramerous, epigynous, cyclic.

(7) Calyx — Sepals 4, gamosepalous, valvate.

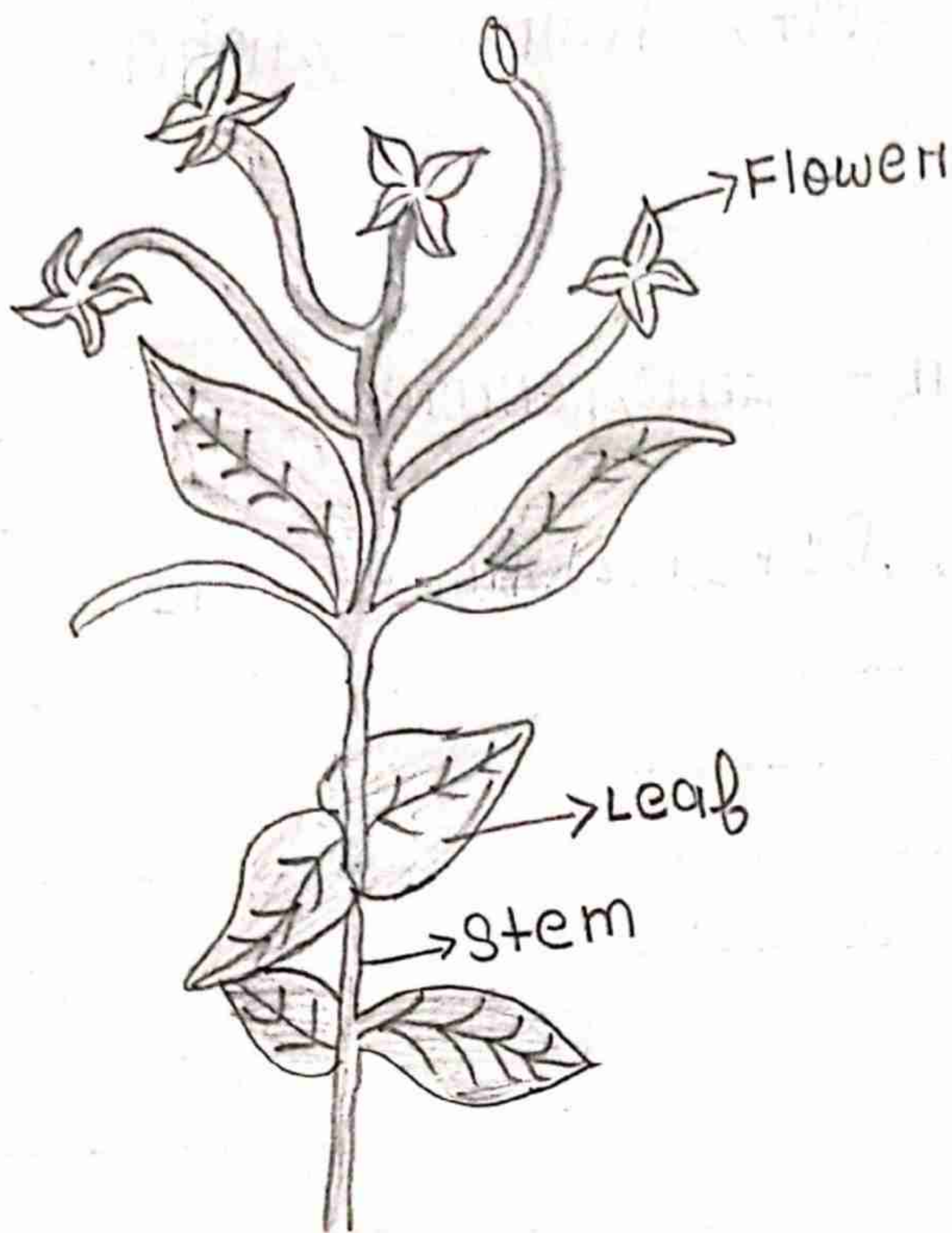
(8) Corolla — Petals 4, gamopetalous, twisted, long, slender, corolla tube with abruptly expanded corolla limb (hypanthium).

(9) Androecium — Stamens 4, polyandrous, epipetalous, inserted at the mouth of the corolla, filaments short, ditheous, demiglandular, introrse.

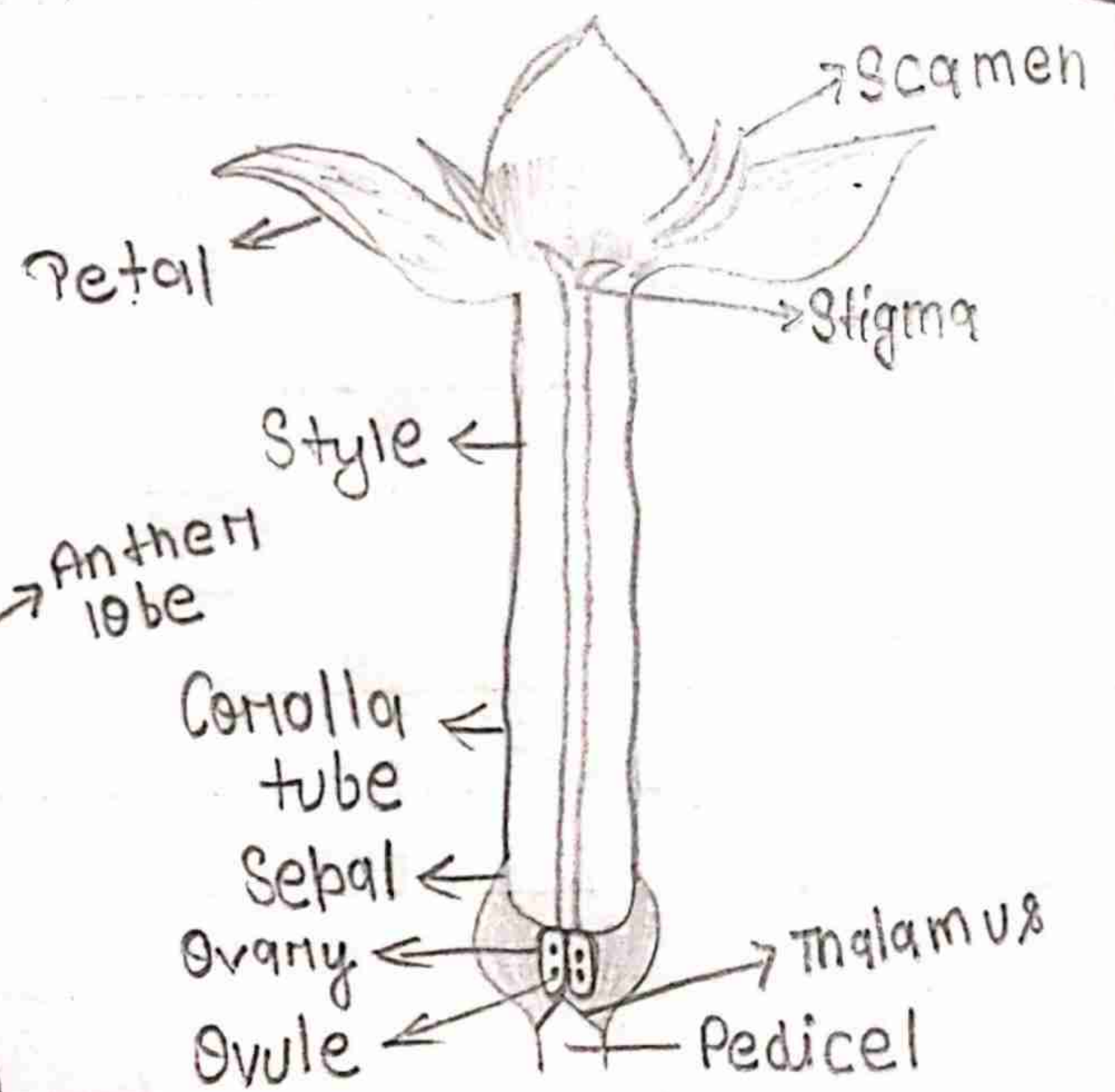
Teacher's Signature :

Systematic position

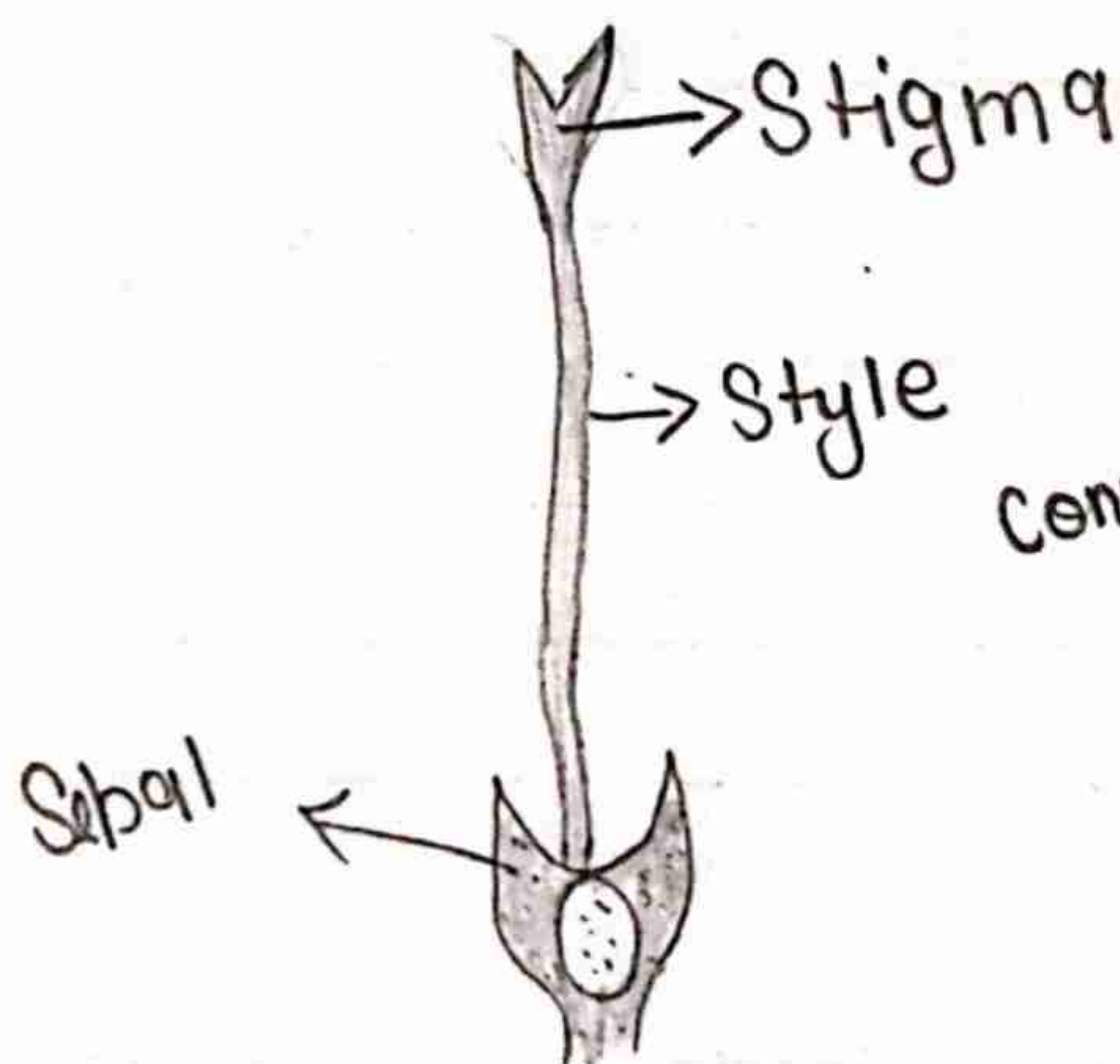
Division	—	Angiosperms
Class	—	Dicotyledonae
Sub-Class	—	Gramopetalae
Series	—	Inferae
Order	—	Rubiales
Family	—	Rubiaceae
Genus	—	Ixora
Species	—	Coccinea



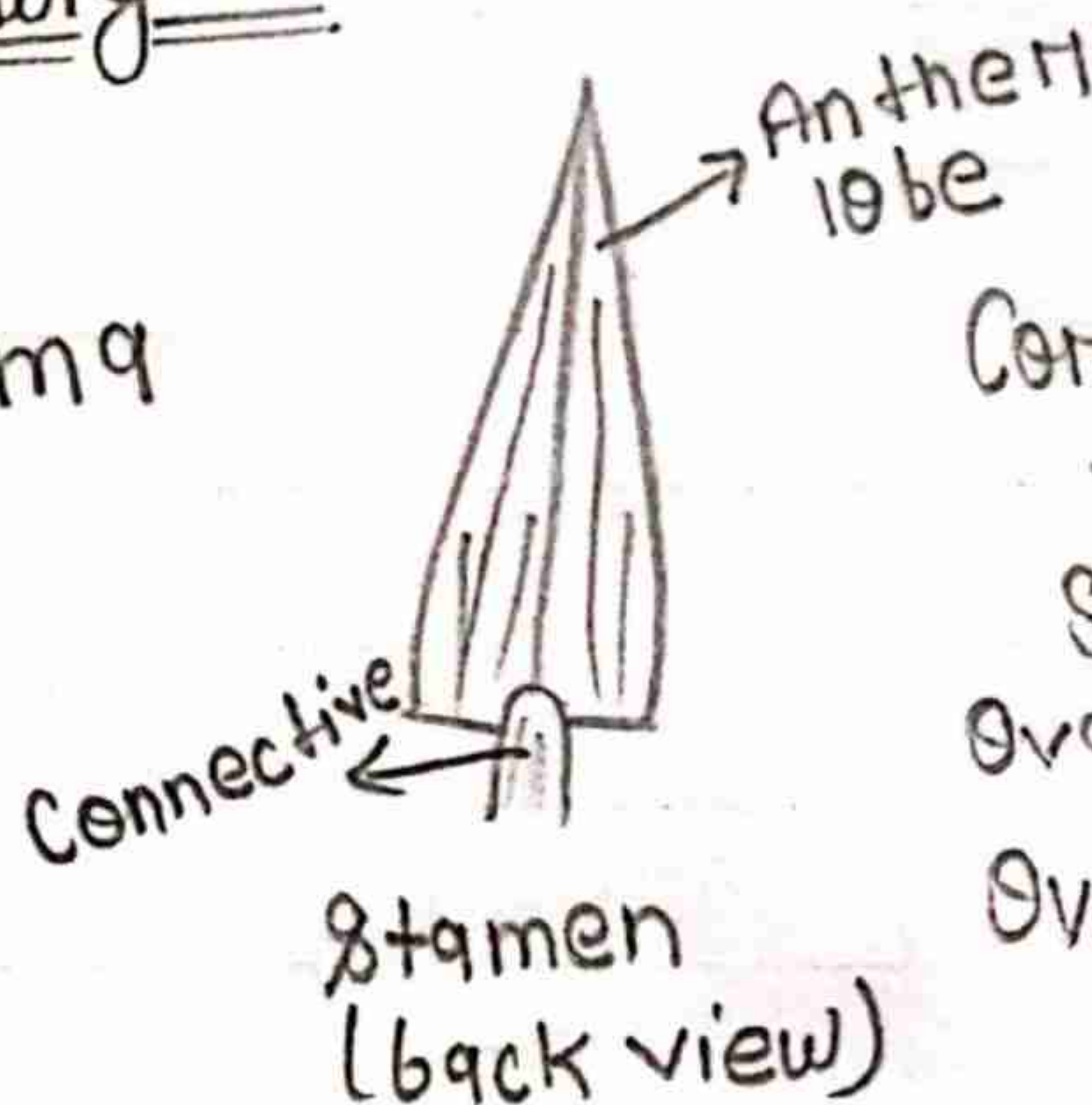
A flowering twig



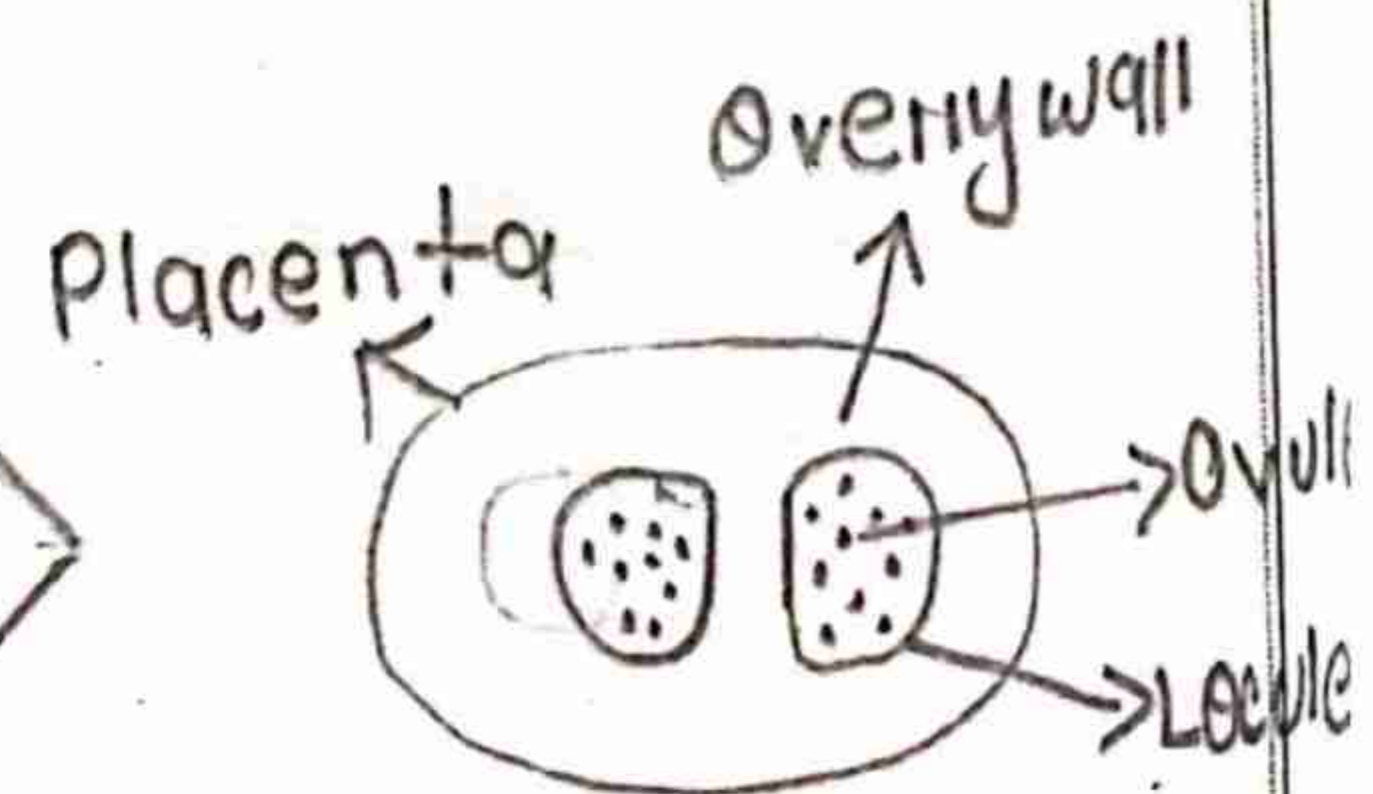
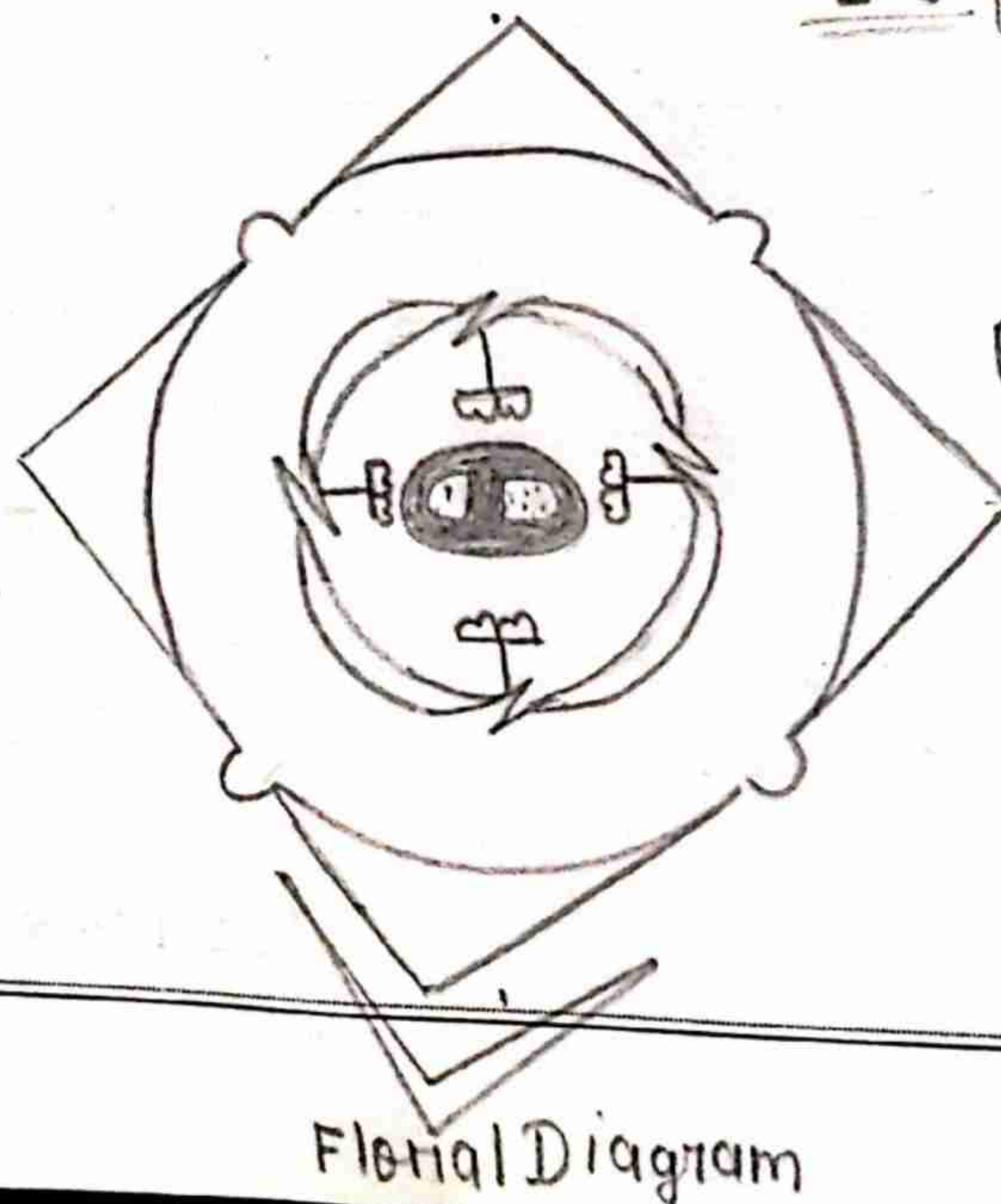
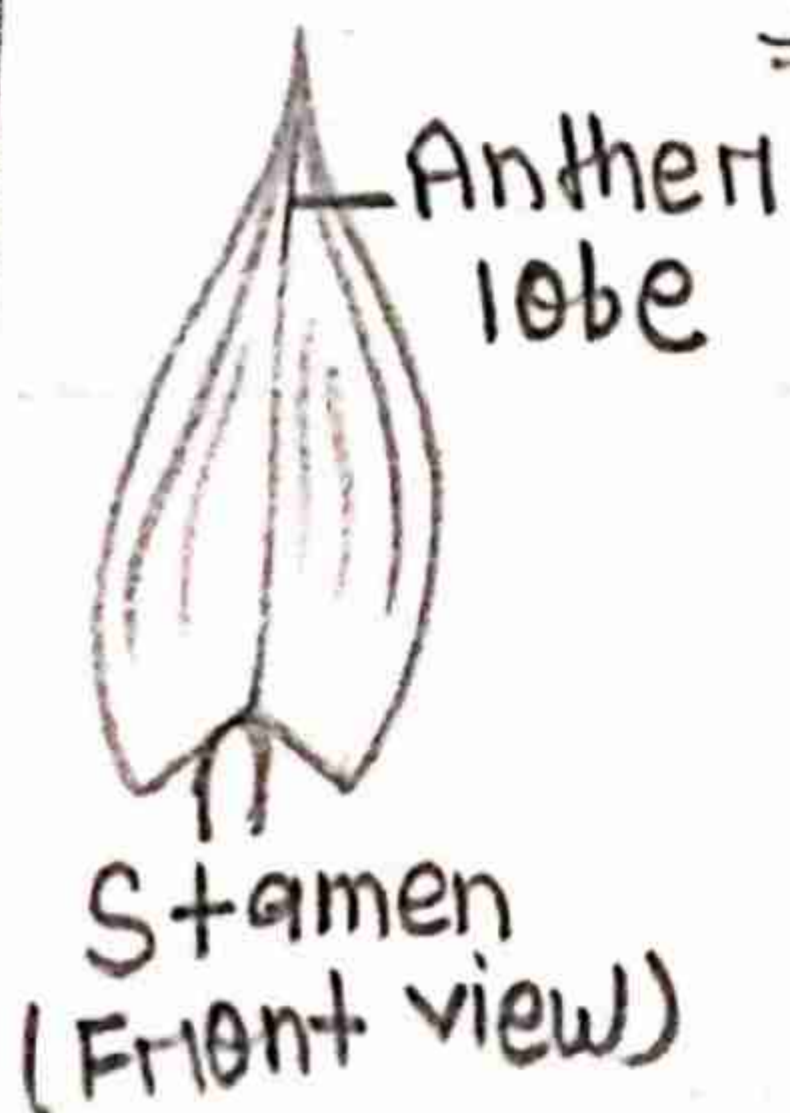
L.S. flower



Gynoecium



Stamen (back view)



T.S. ovary

Floral Diagram

- (10) Gynoecium — Bicarpellary, syncarpous, ovary inferior, bilocular with two ovules in each locule, placentation axile, style long and stigma bifid.
- (11) Fruit — Berry.
- (12) Seed — Small, endospermic.
- (13) Floral formula — $B_n, bnl, \oplus, \text{♀}, K(4), \overline{C(4)}, \overline{A(4)}, \overline{G(2)}$.

Teacher's Signature :

Liliaceae (*Allium cepa*)Comment ⇒

(1) Habit — An annual cultivate herb.

(2) Root — Adventitious fibrous.

(3) Stem — Underground tunicated bulb, extremely reduced to a conical disc like structure.

(4) Leaves — Radical, cylindrical, long, exstipulate, sessile, fleshy, sheathing leafbase, hollow, multicostate parallel venation.

(5) Inflorescence — Monochasial cymes enclosed by 2 or 3 membranous bracts arranged in an umbellate fashion on an erect leafless gynoeceum scape.

(6) Flower — Pedicellate, small, hermaphrodite, hypogynous, complete, actinomorphic, trimemous, white bracteate.

(7) Perianth — Sepals 6, in 2 whorls of 3 each, gamophyllous, united at the base, white, inferior.

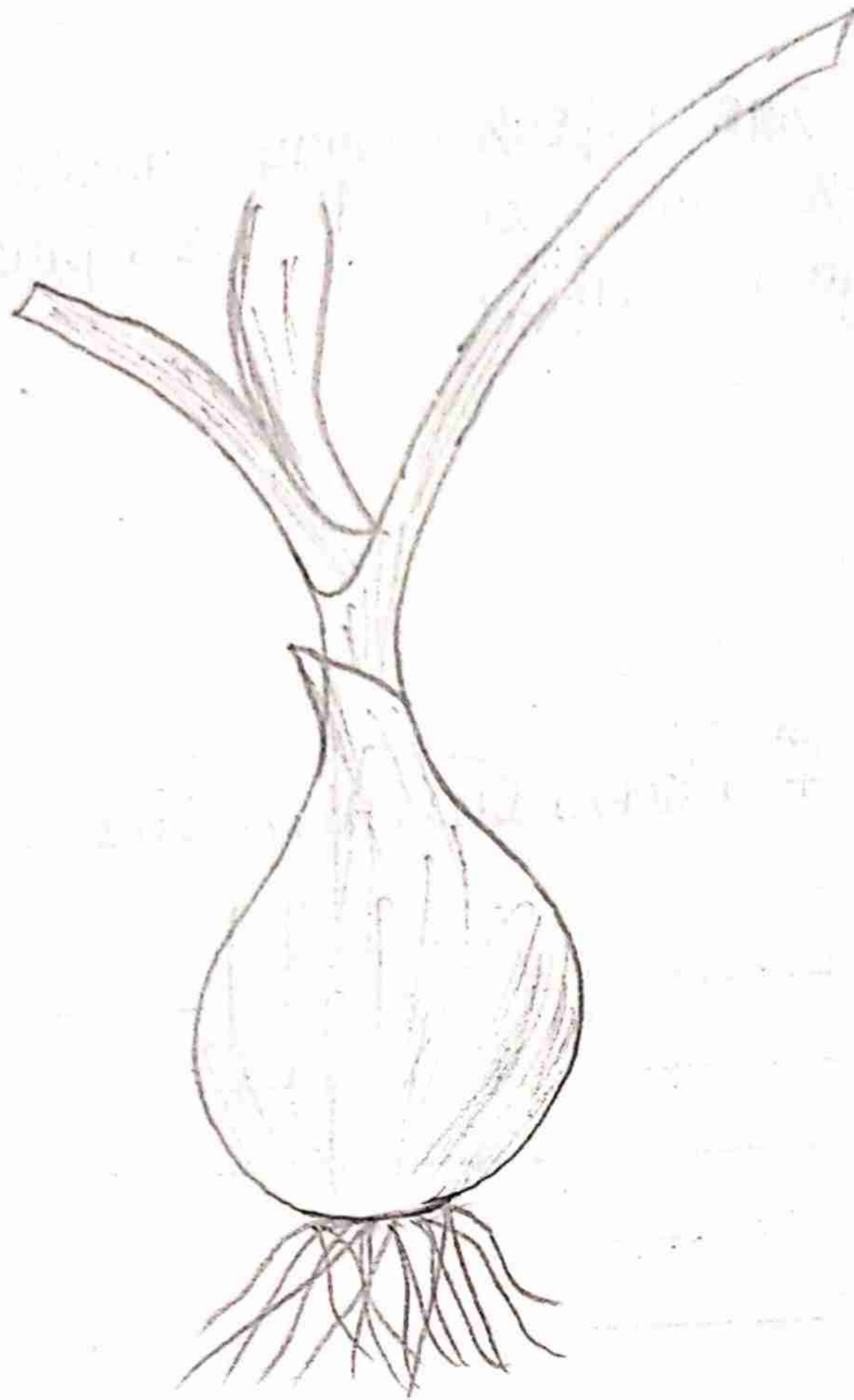
(8) Androeceum — Stamens 6, polyandrous, in two whorls of 3 each, epiphyllous, filament narrow, dilated at the base anthers ditheous, dorsifixed.

(9) Gynoeceum — Tricarpellary, syncarpous, ovary superior,

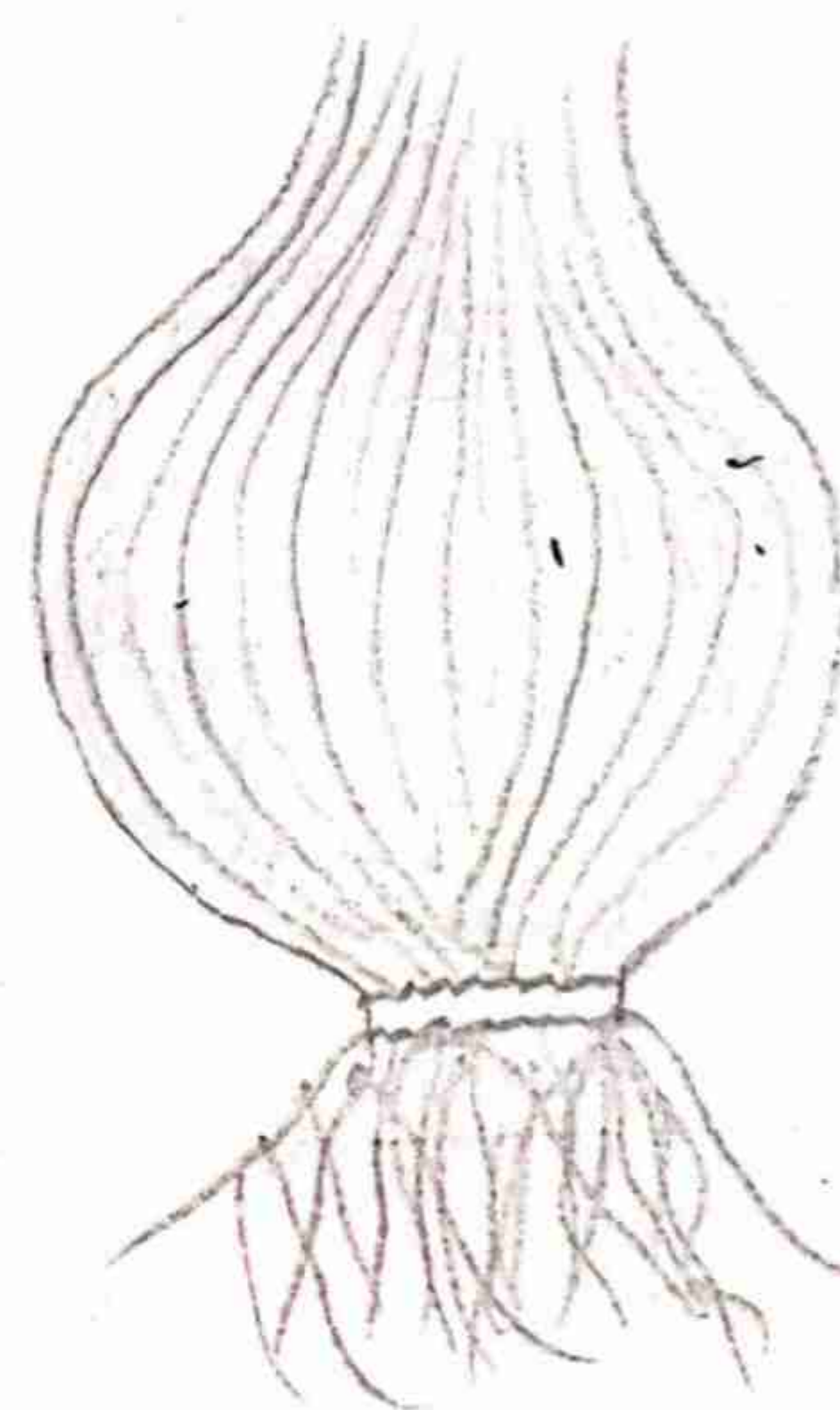
Teacher's Signature :

Systematic position

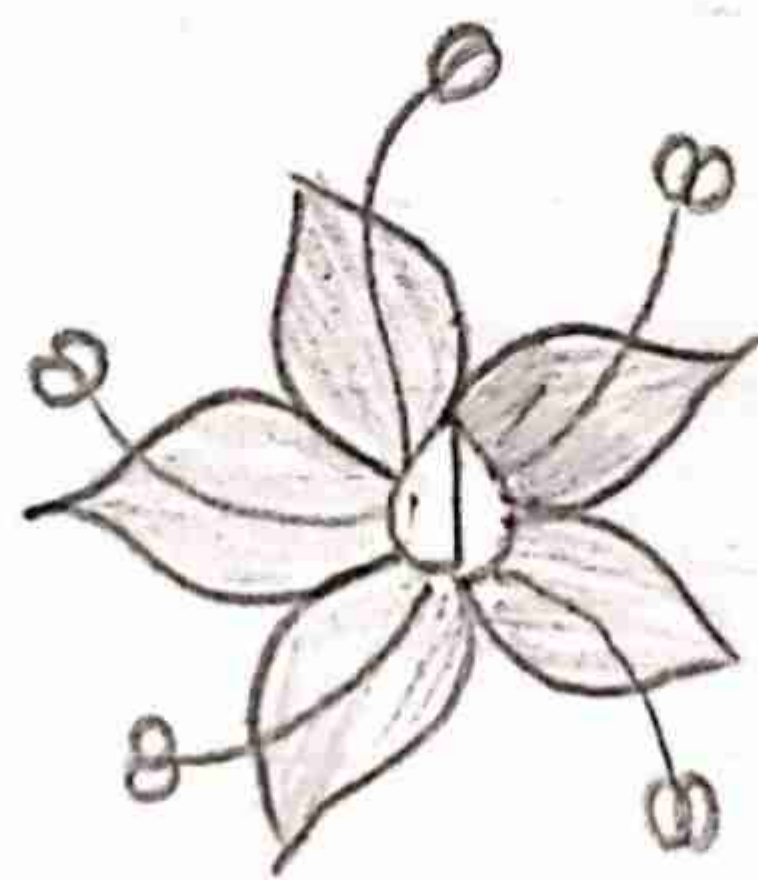
Division — Angiosperms
 Class — Monocotyledonae
 Series — Communiaceae
 Family — Liliaceae
 Genus — Allium
 Species — Cera



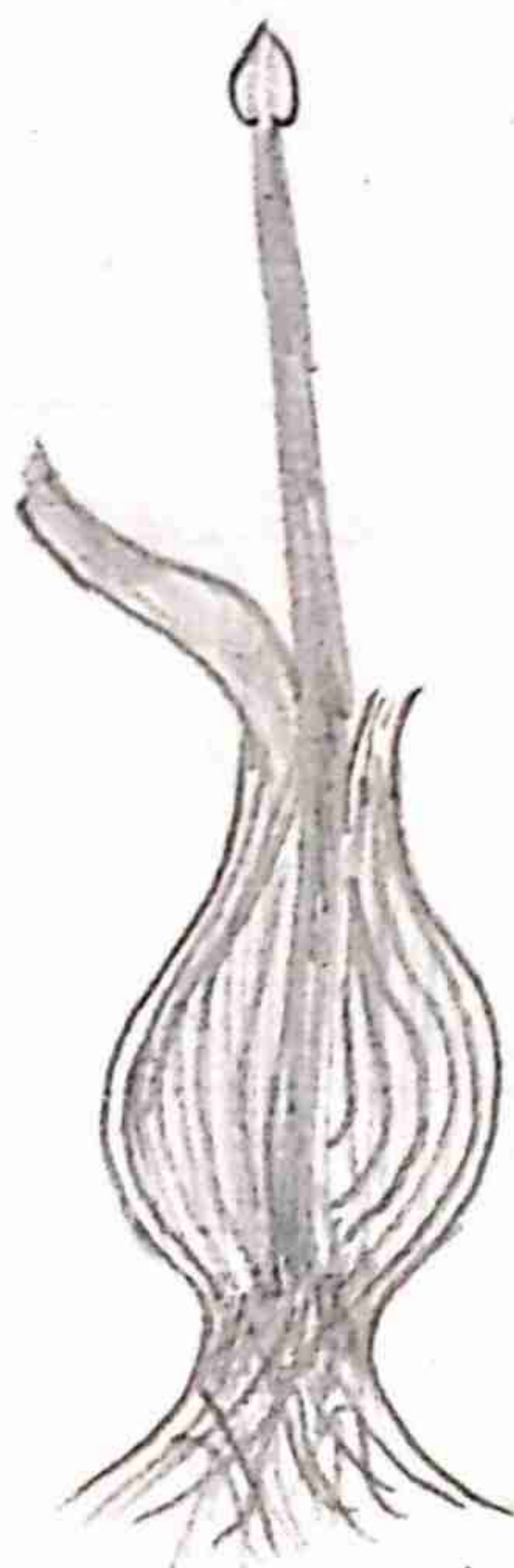
A - Entire plant



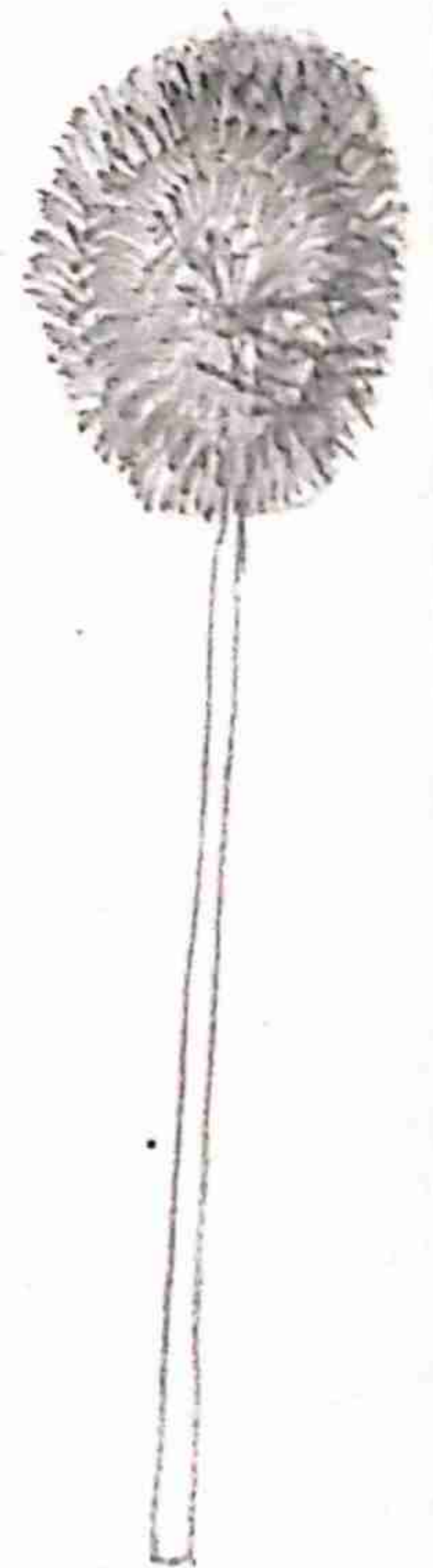
B - Bulb



C - Entire flower



D - plant with inflorescence



E - inflorescence

Expt. No.....

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trilocular, axile placentation, 2 ovules per loculus,
style short filiform, stigma minute.

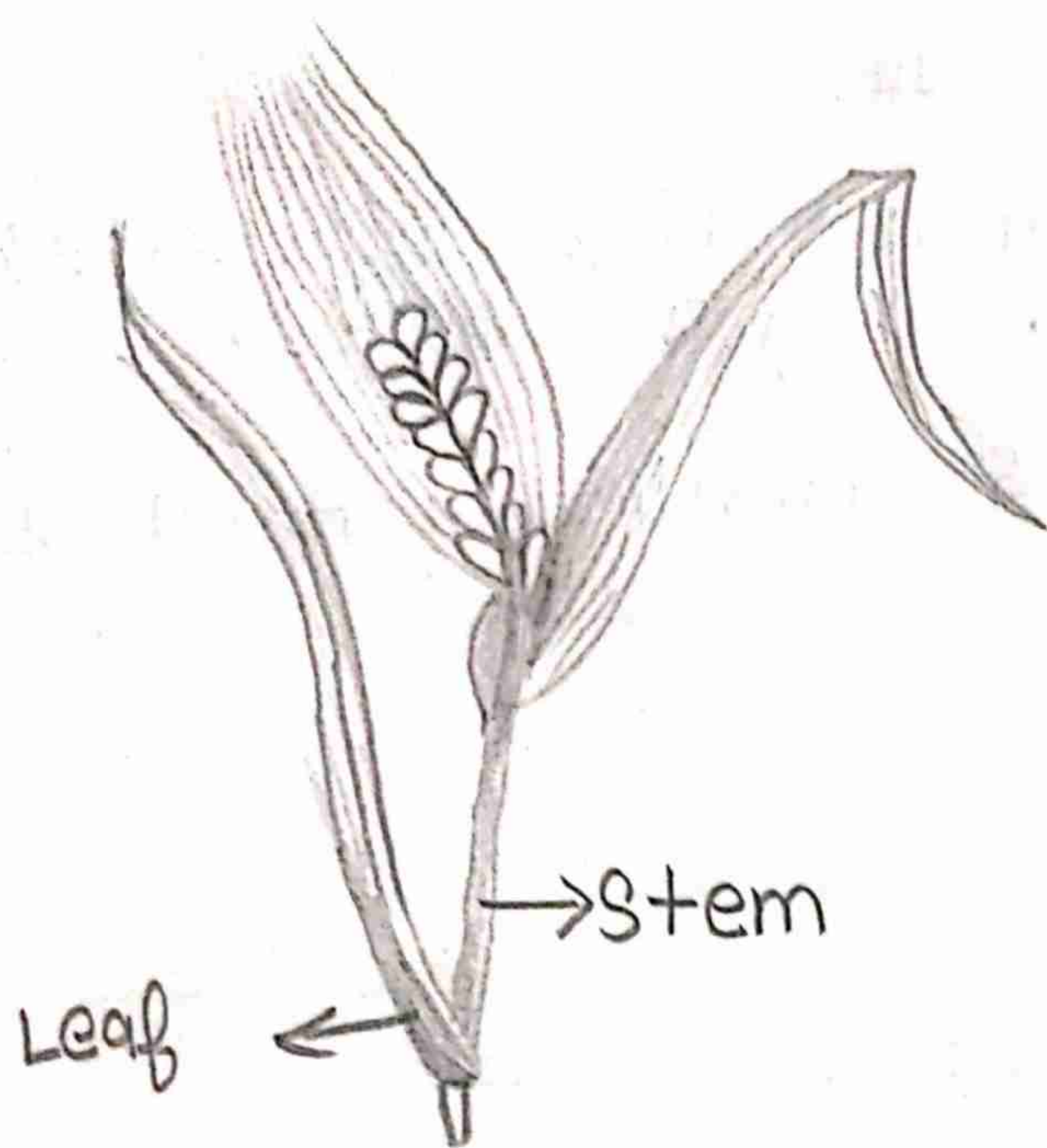
(10) Floral formula — $B_{\overline{11}}, \oplus \overline{\text{♀}} P_{(3+3)} A_{(3+3)} A_{3+3} \underline{G_{(13)}}$.

Teacher's Signature :

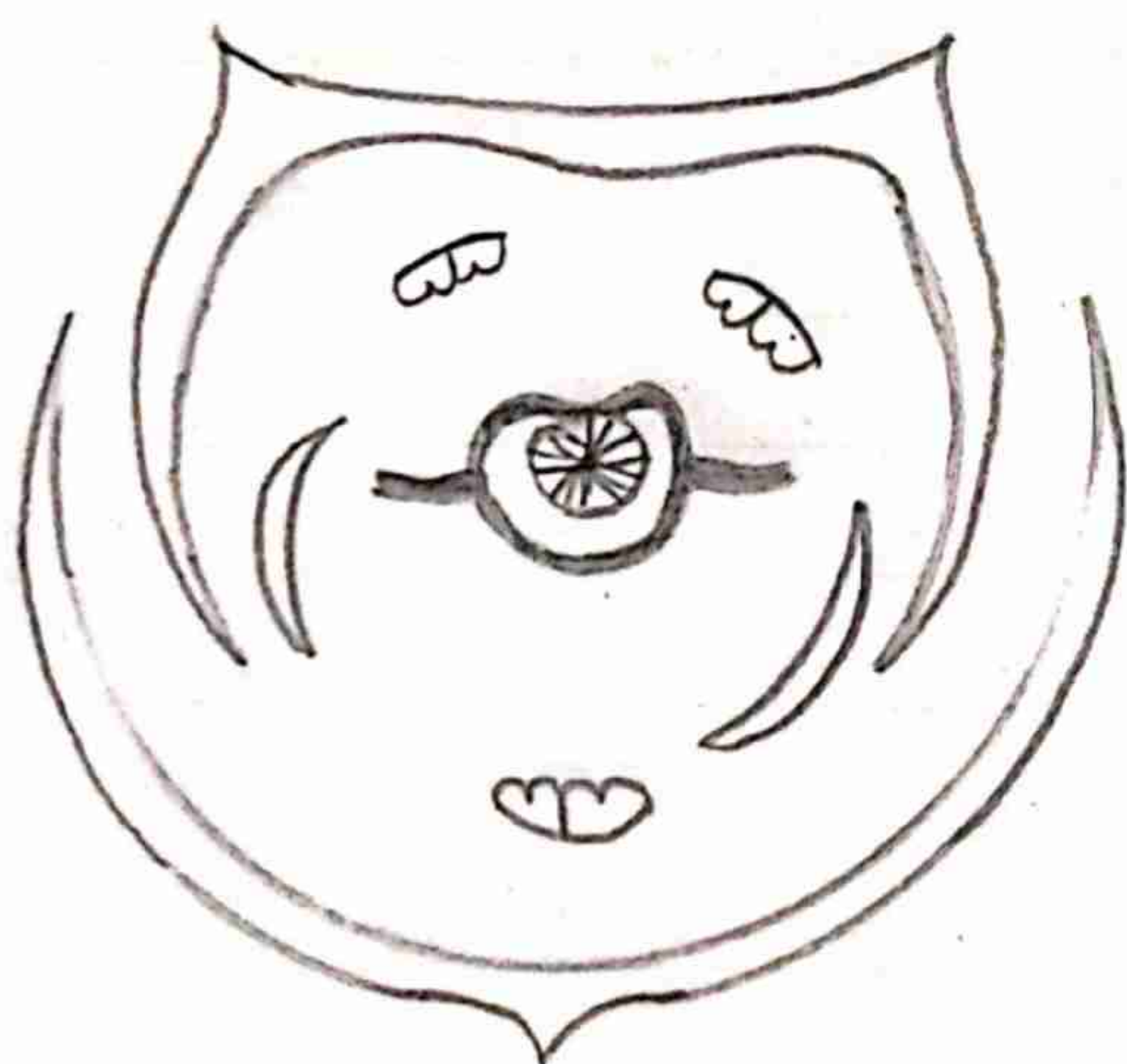
Poaceae (*Triticum aestivum*) (Grass)Comment →

- (1) Habit ⇒ Annual (*oryza*) or perennial (*saccharum*) herbs.
- (2) Root - Adventitious often endomycorrhizal.
- (3) Stem - The stem may be underground as in rhizomes, cylindrical with conspicuous nodes and internodes, woody or herbaceous.
- (4) Leaf - Alternate, simple, distichous, exstipulate, sessile, ligulate (absent in *echinocloa*), leafbase forming tubular sheath, sheath open, surrounding internode incompletely, ligule is present at the junction of the lamina and sheath, entire, hairy or rough, linear, parallel venation.
- (5) Inflorescence ⇒ The spikelet consists of a short axis called rachilla on which 1 to many sessile or short stalked flowers are borne. The flowers may be arranged in alternate or opposite manner on the central axis.
- (6) Flower - Bracteate and bracteolate, sessile, incomplete, hermaphrodite, or unisexual, irregular, zygomorphic, hypogynous, cyclic.

Teacher's Signature :



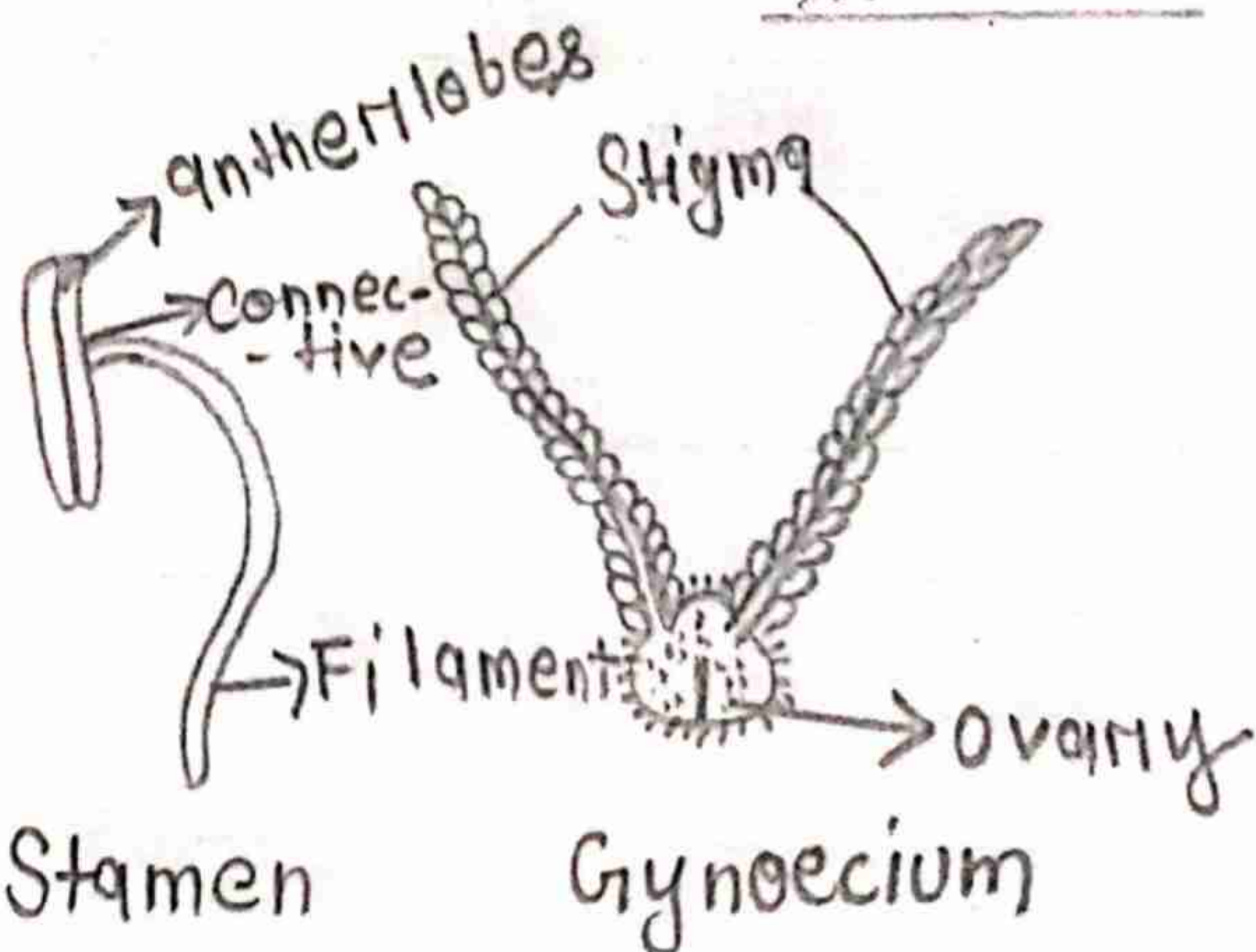
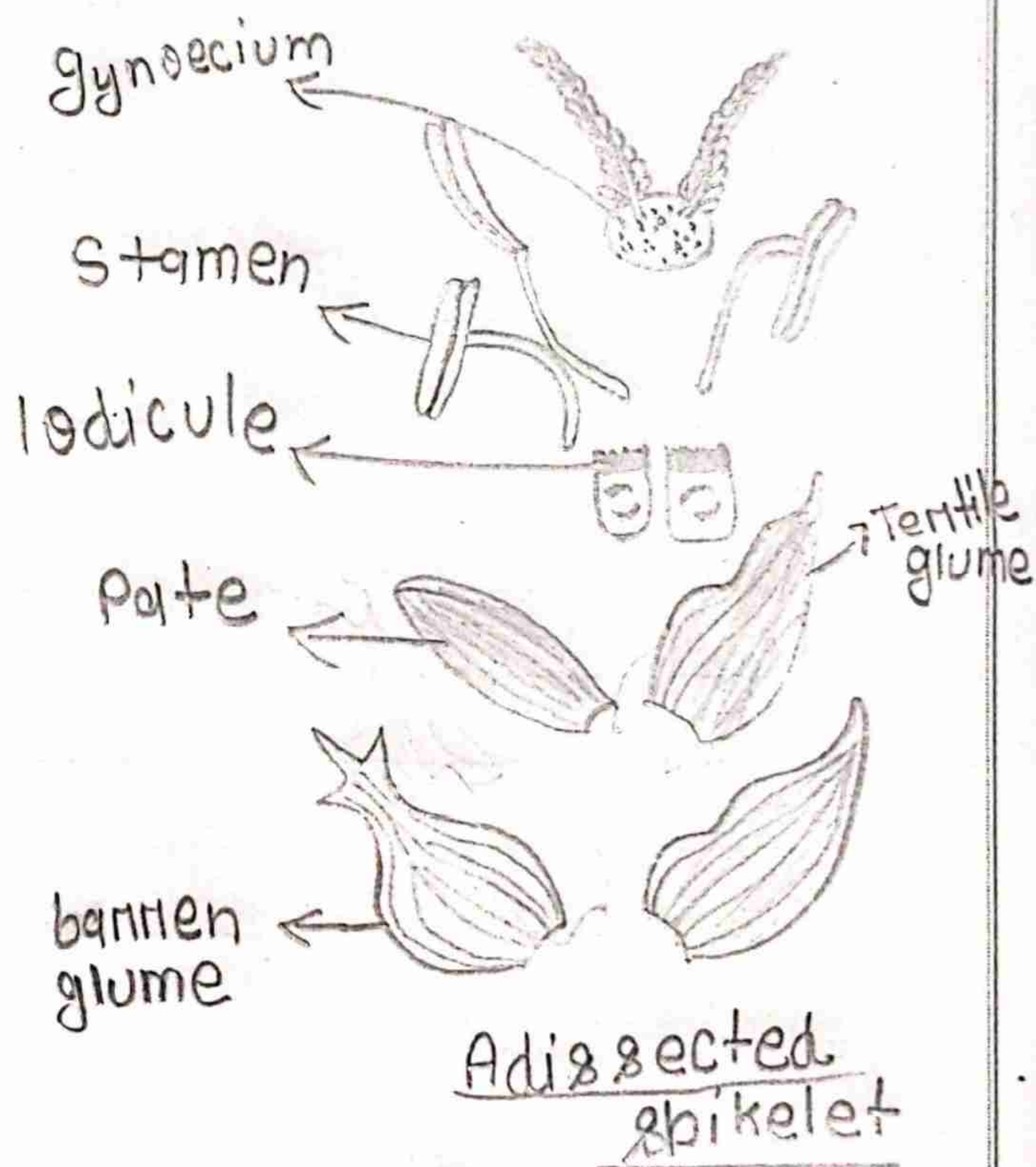
A flowering twig



Floral Diagram

Systematic position

Division	—	Angiosperms
Class	—	Monocotyledonae
Series	—	Glumaceae
Family	—	Poaceae
Genus	—	Triticum
Species	—	Aestivum



(7) Perianth —

Represented by membranous scales called the lodicules. The lodicules are situated above and opposite the superior palea or may be absent, on many (*Ochlandra*), on 2 or 3.

(8) Androecium — 3 stamens in a whorl, sometimes 1, 2 or 6.

(9) Gynoecium — Gynoecium of poaceae has an ovary which has a basal type of placentation which means the placenta is found at the base of the ovary. It has basal placentation. It has a superior ovary, which means it has a hypogynous flower, and the ovary is unilocular with a single ovule.

(10) Fruit — Caryopsis.

(11) Seed — Maize, wheat, rice, barley, and millet.

(12) Floral formula — $\% \text{ } \text{P} \text{ } \text{O} \text{ } 2 \text{ (Lodicules), } \text{A} \text{ } 3 \text{ or } 6, \text{G} \text{ } 1$.

Teacher's Signature :

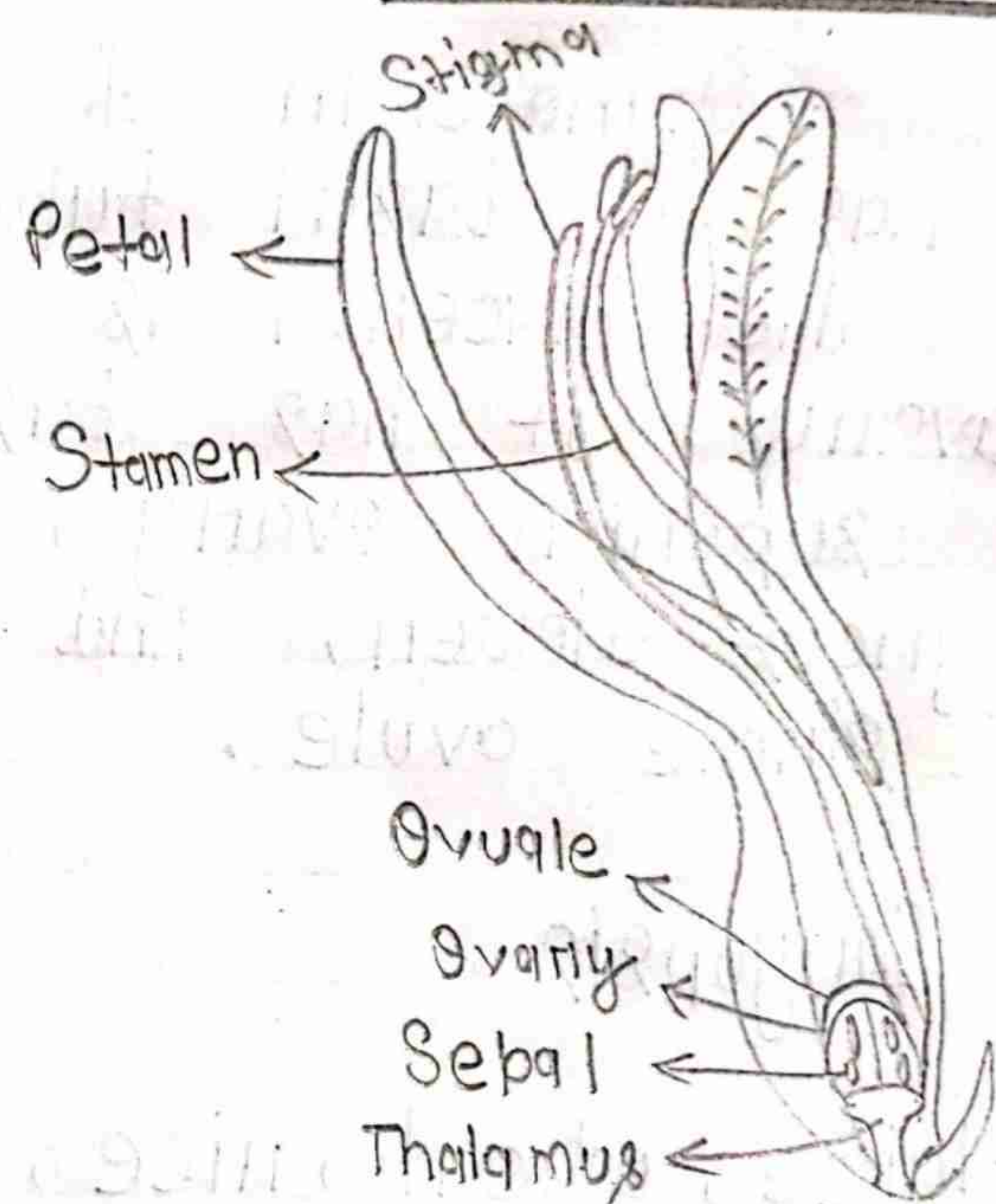
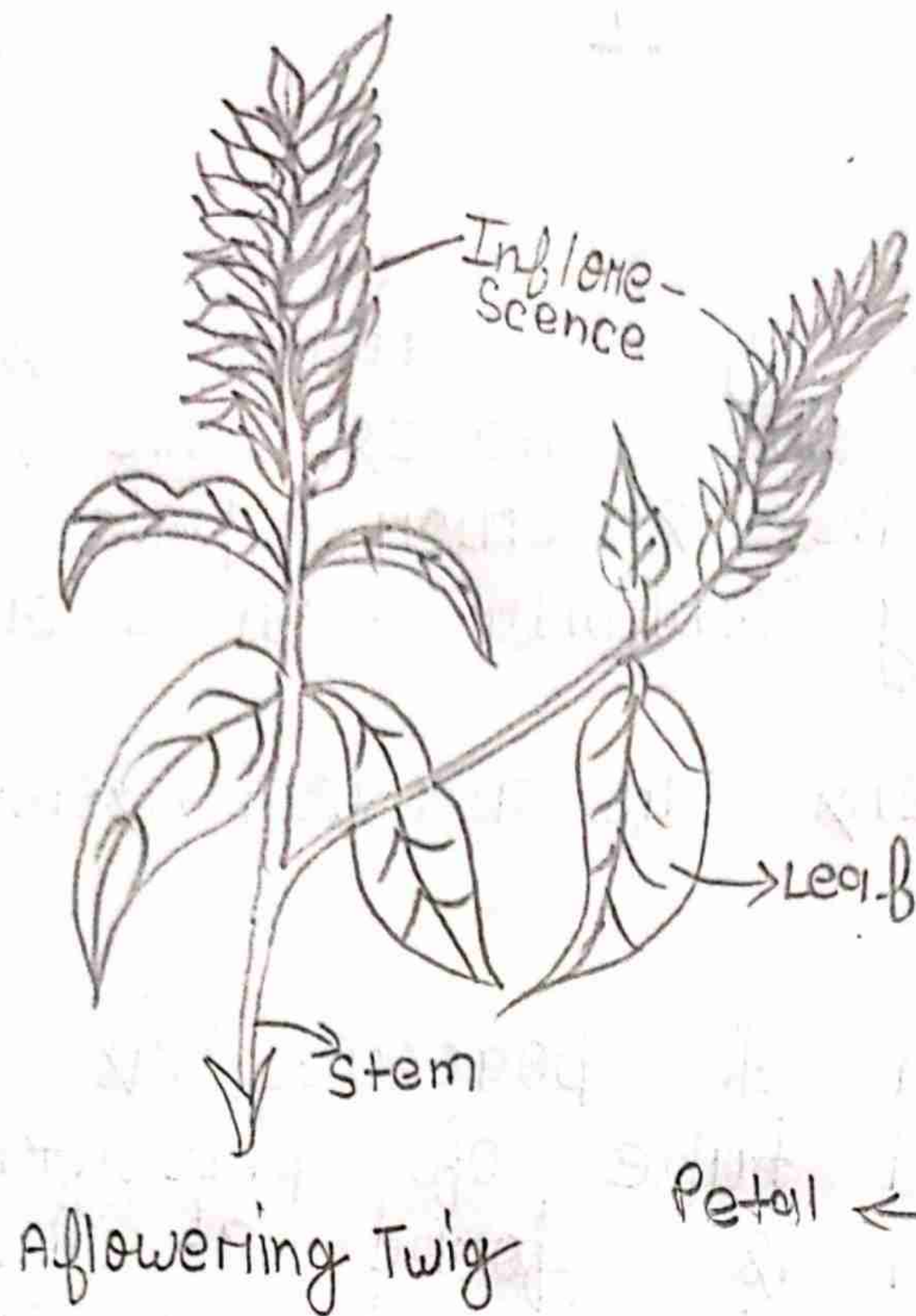
Acanthaceae (*Adhatoda vasica*) (Barak on Roosa)**Comment** ⇒

- (1) Habit — Annual herb.
- (2) Root — Branched, tap root.
- (3) Stem — Herbaceous, erect, branched, cylindrical, solid, swollen, nodes, pale green.
- (4) Leaf — Ramal and cauline, simple, exstipulate, opposite, decussate, petiolate, lanceolate to ovate, entire, acute, unisostate, reticulate, pale green.
- (5) Inflorescence — Axillary racemose spike.
- (6) Flower — Bracteate, bracteolate, sub-sessile, complete, hemiphrmodite, zygomorphic, pentamerous, hypogynous.
- (7) Calyx — Sepals 5, polysepalous, slightly connate at the base, quincuncial.
- (8) Corolla — Petal 5, gamopetalous, valvate, corolla 2/3 bilabiate, perianate, lower lip has a groove in the centre in which style lies in bud condition, corolla out growths present at the throat of the corolla
- (9) Androecium — Stamens 2, polyandrous, epipetalous, filament thick and long, ditheous, basifixed, introrse, external

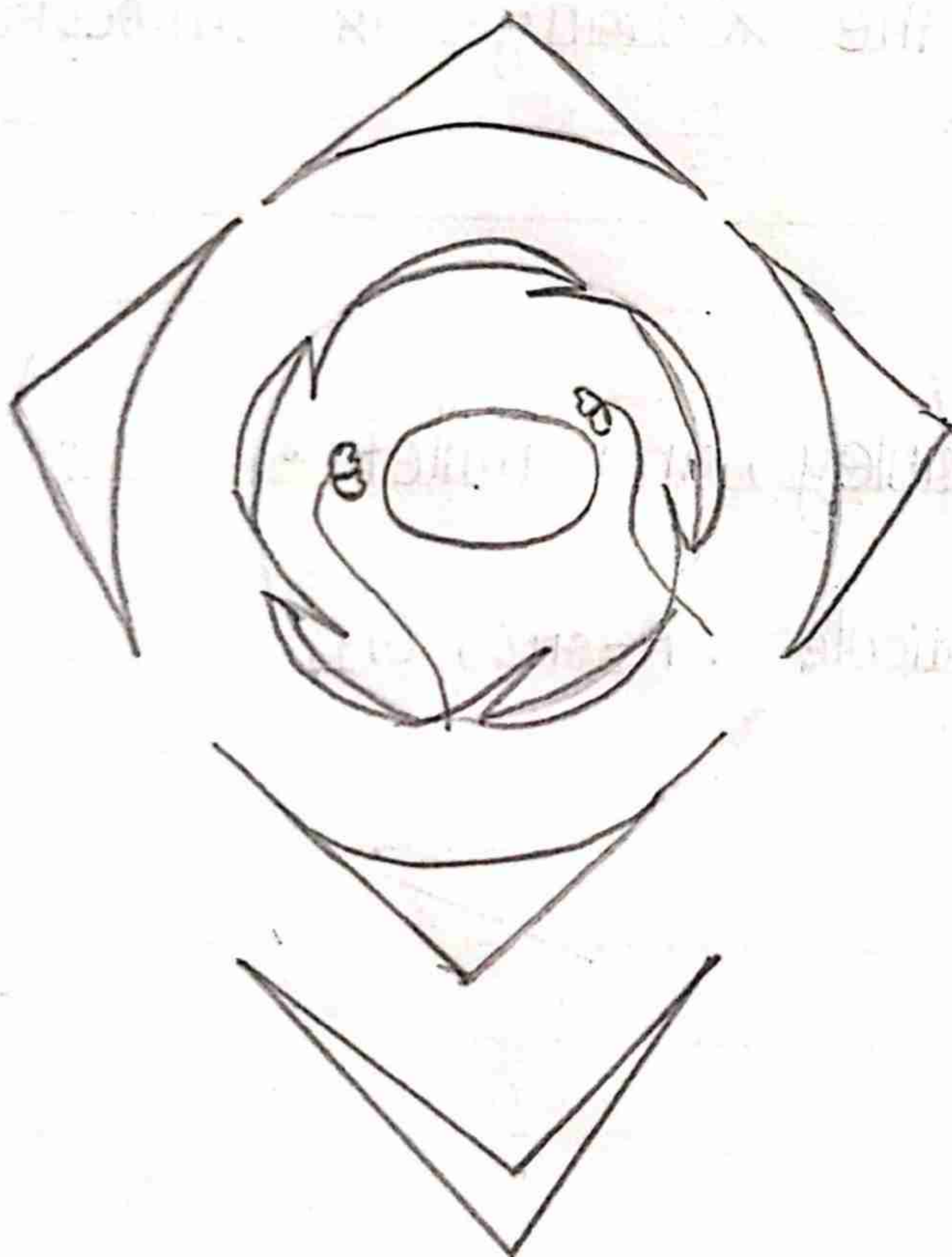
Teacher's Signature :

Systematic position

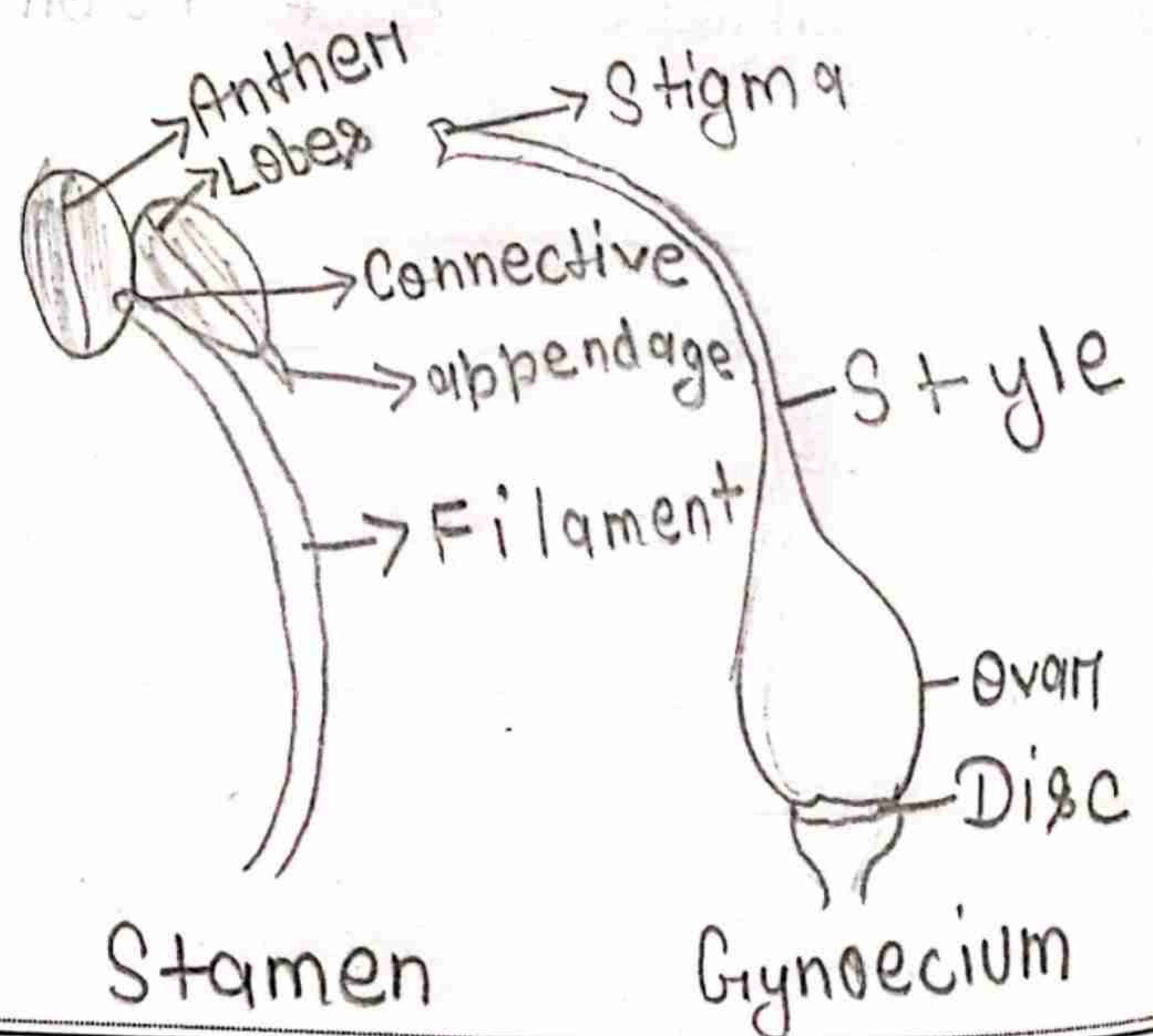
Division — Angiosperms
 Class — Dicotyledonae
 Sub-class — Gamopetalae
 Series — Bicarpellatae
 Order — Penstemonales
 Family — Acanthaceae
 Genus — Adiantum
 Species — varica



L.S. Flower



Floral Diagram



Stamen

Gynoecium

anther lobe is higher than inner.

(10) Gynoecium — Bicarpellary, syncarpous, superior, bilocular, two ovules in each locule, axile placentation, style long and curved, stigma capitate.

(11) Fruit — Capsule.

(12) Seed — Large, non-endospermic and provided with hooks called jaculatus.

(13) Floral formula — $B_n, b_n, \oplus, \text{♀}, K(5), C(2/3), A_2, \underline{G}(2)$.

Teacher's Signature :

Experiment - No - 12Basic structure of computer

It typical computer system consist of 3 (3) three main component.

1. Input
2. Central processing unit
3. Output

1. Input ⇒

The input unit read instructions and data into a computer's memory it convert to imp. information to data for the transmission to computer processing unit.

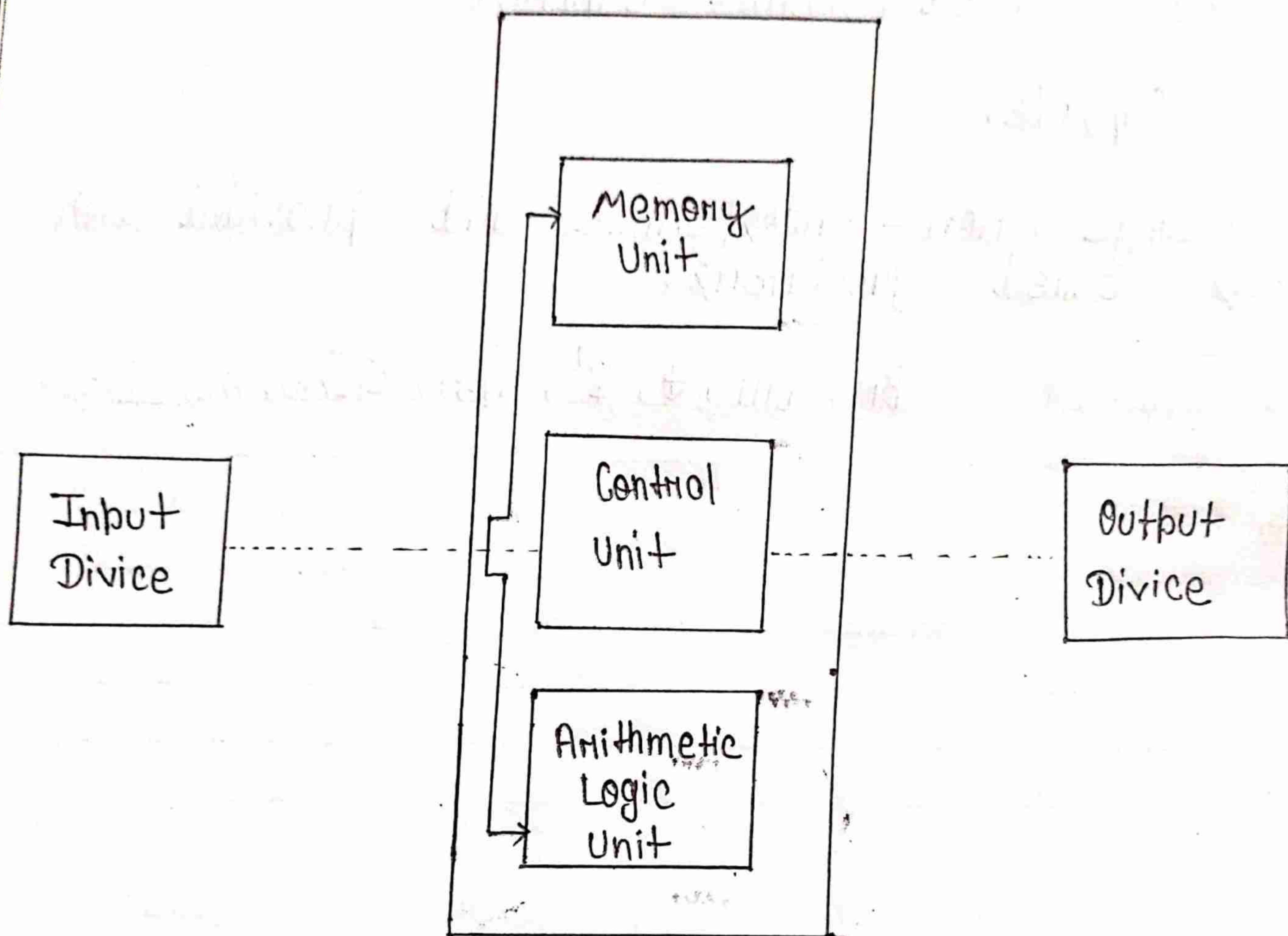
Example ⇒ Keyboard, Scanner, Mouse etc.

2. Central processing unit ⇒

It is the brain of computer because its control functionality of a computer, central processing unit consist of —

- * Control unit (CU)
- * Arithmetic and logic unit
- * Memory unit

Teacher's Signature :



Basic structure of computer

3. Output ⇒

Output unit present the result of competing process the solution of a given problem soon by these units. It is commonly used as —

Visual display unit
Printer speaker etc.

Teacher's Signature :

Experiment - No - 13Garden feature

In the garden to break monotony and two in hence the beauty dry garden should contain of varying nature. Any garden features allow to discover and save the creative ideas. On the wide seat of natural green carpet following the importance feature.

Garden wall ⇒

A garden should generally be visible and enjoyable from outside as well as from inside wall along the perimeter block the view of a garden. Garden wall have following purpose.

- To provide a secure and permanent boundary.
- To separate an area away from the main space.
- High wall provide security from the enemies.

Fencing ⇒

To separate one part of the garden from another.

- For protection of garden.

Teacher's Signature :

It is a utility item.

Step →

Step used to move from one level to an other step can be made of stone or wood or gravel.

Hedge →

With the help of plant leave hedge can be formed and use as a green wall generally shrub are used for making hedge. Hedge can be protective or ornamental.

Edge →

These are perineal shrub or herb as a short border of ground cover or dividing from road or path. It is also used for decoration purpose with contrast coloured polliose plant.

Teacher's Signature :

Experiment - No - 14International code of botanical nomenclature

The code is divided mainly into 3 part (a) principle, (b) Rule (Laws) and (c) Recommendations.

Some of the important features of the code -

1. Every new plant should be described in latin language and in the end author's name should also be mentioned.
2. Every new 'type' should have detailed description date, floral formula, floral diagram and the Herbarium should be kept separately.
3. Pseudonyms are not allowed.
4. Botanical names are independent of zoological names.
5. The author is one who first get approved of the name by ICBN.
6. New name should be published in every botanical magazine and journal.
7. According to ICBN now every family name should end in aceae.
8. Name should have generic and specific names.
9. Name should not be very long.
10. Genus is divided into subgenus, family into subfamily. Class into subclass and species into subspecies.

The hierarchy order is as follows.

Teacher's Signature :

Rules and Recommendations ⇒

1. All those plants which belong to one genus must be designated by the source generic name. (Rule 213)
2. All those plants which belong to different genera must be designated by different generic names. (Rule 214)
3. He who establishes a new genus should give it a name. (Rule 218)
4. Those generic name are best which show essential characters of plant or its appearance. (Rule 240)
5. Generic names are best which show essential characters of plant one and a half foot long or difficult to pronounce or unpleasant, are to be avoided. (Rule 249)
6. The specific name must distinguish a plant from all its relatives. (Rule 257)
7. Size does not distinguish species. (Rule 260)
8. The original place of plant does not give specific difference. (Rule 264)
9. A generic name must be applied to each plant species. (Rule 284)
10. The specific name should always follow the generic name. (Rule 285)

Teacher's Signature :

Experiment - No - 15

TAXONOMIC RESOURCES

HERBARIUM ⇒

Functions and important herbarium-

Herbarium is a collection of dried and pressed plant specimens, mounted on sheets, identified and classified according to some approved system of classification arranged in a sequence of an accepted classification and which are readily available for reference.

Some important herbaria of the world and

India ⇒

1. Herbarium of Royal Botanical Gardens, Kew, Great Britain, established in 1853 and is the world's greatest herbarium including about 6000,000 plants.
2. Museum National Histoire Naturelle Laboratoire de Phanerogamie, Paris, France.
3. British Museum, London, England.
4. Herbarium of Royal Botanical Gardens, Edinburgh, England.
5. U.S. National Museum, U.S. Smithsonian Institution Washington, U.S.A.

Teacher's Signature :

Indian Herbaria ⇒

1. Herbarium of the Indian, established Botanical Garden, Calcutta (Central National Herbarium, Howrah).
Biggest herbarium of India, established in 1787 and ~~is~~ possesses more than one million specimens.
2. Herbarium of Forest Research Institute and college, Dehradun.
3. Herbarium of Agriculture, St. Xavier's college, Fort Bombay.
4. Blatter Herbarium, of national botanical gardens, Lucknow.
5. Herbarium of college and research Institute, Coimbatore.

Teacher's Signature :