

Malvaceae

Aids for field Identification $\rightarrow$ Herbs or shrubs, generally with stellate trichomes, Sepals

Persistent, stamens monodelphous anthers monotheous, Carpels 5 or more.

1. *Gossypium Herbaceum* L. (Kapas)

Habit: An annual or Perennial herb or shrub.

Root: Branched, tap roots.

Stem: Herbaceous but woody at the lower level, aerial, erect, cylindrical, much branched, hairy.

Leaf: Ramal and cauline, simple, alternate, Petiole, stipulate, Multicostate Venation.

Inflorescence: Cymose or solitary axillary.

Flower: Ebracteate, Pedicellate, Complete herma-Phrodite actinomorphic

Epicalyx: 3, fused, Large

Calyx: Sepals 5, gamosepalous, cup-shaped, valvate green

Corolla: Petals 5, Polypetalous, Conate at the base, twisted yellow.

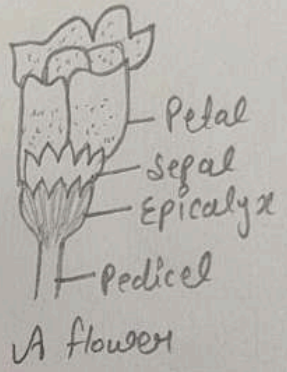
Androecium: Stamens many, monodelphous, epipetalous, mono.

Floral formula: $\text{Ebr}, \oplus, \overline{\text{Q}}, \text{Ep}(3), \text{K}(5), \text{C}(5), \text{A}(\infty), \underline{\text{G}}(5)$

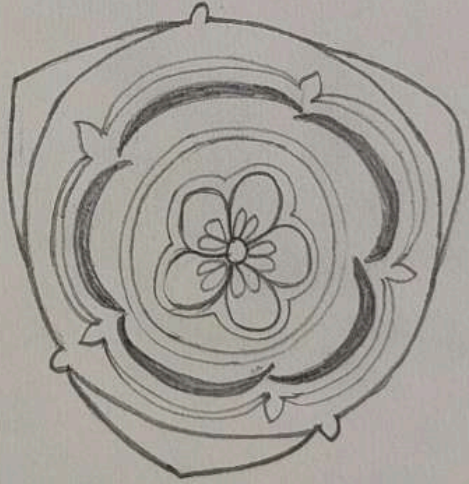
Division - Trachophyta
 Class - Magnoliopsida
 Order - Malvales
 Family - Malvaceae
 Genus - *Gossypium*



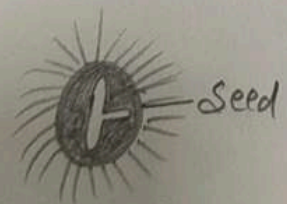
A flowering twig



A flower



Floral Diagram



A Seed with Cotton fibres

Figure - *Gossypium* Herbarium L.

Vary
 23/11/23

Hibiscus rose-sinensis

Habit: An ornamental evergreen herb

Root: Branched, tap root.

Stem: Woody and solid but herbaceous at upper portion, aerial, erect cylindrical, branched, solid

Leaf: Ramal and Cauline, stipulate, Petiole, Simple alternate, ovate, serrate, acute glabrous, Unicoastate reticulate venation.

Flower: Ebracteate Pedicellate Complete herma Phorodite, cuculimorphic, Pentamerous, hypogymous, cyclic, large.

Epicalyx: 5 or more free green.

Calyx: Sepals 5, gamosepalous, Campanulate, Valvate, Green.

Corolla: Petals 5, polypetalous but fused at base.

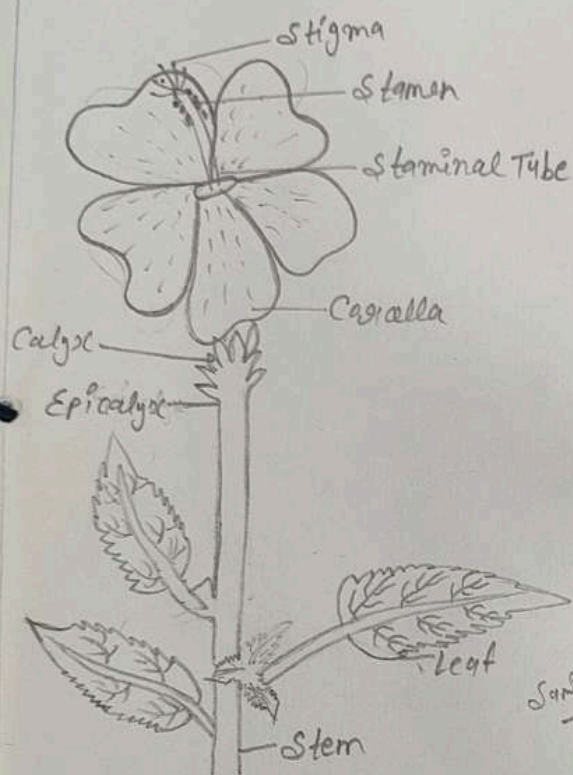
Androeium: Stamen many, monadelphous, epipetalous, staminal tube fused with Corolla and red in colour.

Gynoecium: Pentacarpellary, syncarpous, Superior, Pentacoular many ovules in each locule, axile

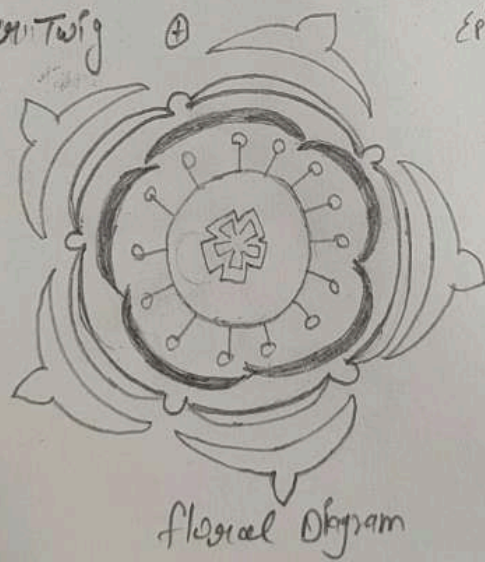
Fruit: 5-Valvate, Loucidal Capsule.

Seed: Small Endospermic

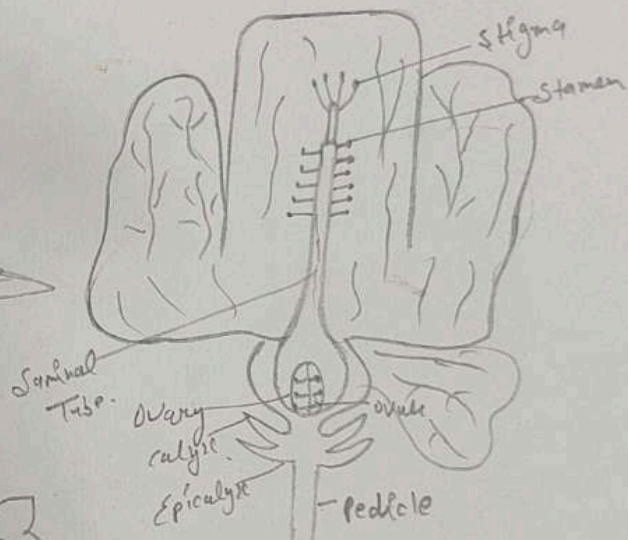
Floral formula: Ebr, $\oplus$, $\overline{\sigma}$ Epik $5-\alpha$, $K_{(5)}$, $A(\alpha)$, $G_2(5)$



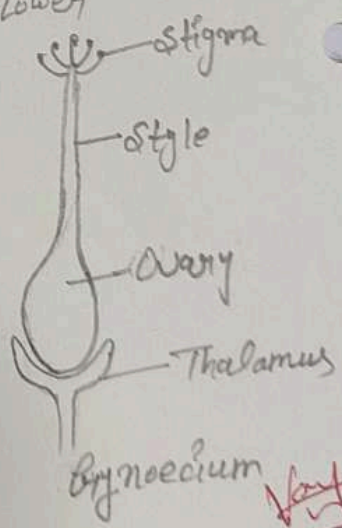
A flower Twig ⊕



Floral Diagram



T.S Flower



Gynoecium

Division - Tracheophyta
 Class - Magnoliopsida
 Order - Malvales
 Family - Malvaceae
 Genus - Hibiscus

Fig: Hibiscus Rose - Sines's

[Signature]
 23/11/23

Fabaceae or Papilionaceae

Aids for identification $\rightarrow$ Herbs, Leaves simple or imparipinnate, with foliaceous stipules, flower, Corolla papilionaceous, descending imbricate, fruit Legume.

Lathyrus odoratus

Habit: Annual climbing herbs, cultivated in gardens.

Root: Branched, taproot, bearing nitrogen fixing bacteria.

Stem: Herbaceous, aereal, weak, branched, flattened, climbing.

Leaf: Ramal and Cauline alternate, Petiole, stipules, leafy.

Imparipinnate, each leaflet is opposite sessile, ovate

Inflourescence: Racemose or solitary axillary.

flower: Bracteate pedicellate, complete, hermaphrodite, zygomorphic, pentamerous perigynous, cyclic.

Calyx: Sepals 5, polypetalous, campanulate, odd sepal.

Corolla: Petals 5, polypetalous, one larger posterior petal, two lateral petals and two anterior petals.

Androecium: Stamen 10, diadelphous (9) + i.e. united to form tube. Lateral 10th posterior stamen free, dithecous.

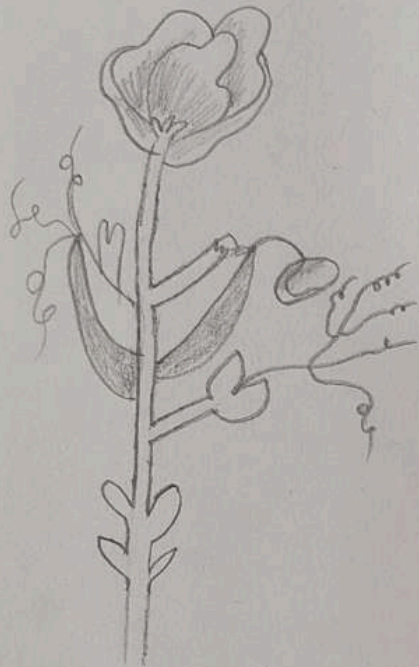
Gynoecium: Monocarpellary, superior or free semi-inferior many ovules in locule, marginal placentation.

fruit: A Legume

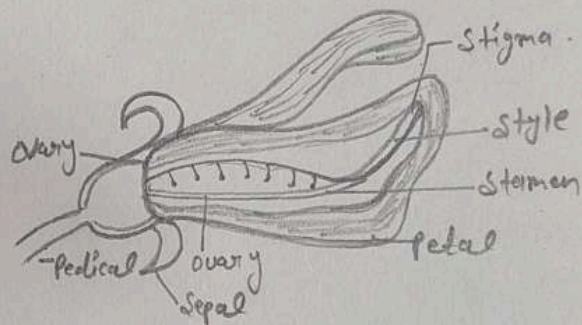
Seed: Non-endospermic

Floral formula: $B_{or}, \oplus, \ominus, K_{(5)}, C_{(4+2+(2))}, A_{1+(9)}, G_{\frac{1}{2} \text{ or } 1}$

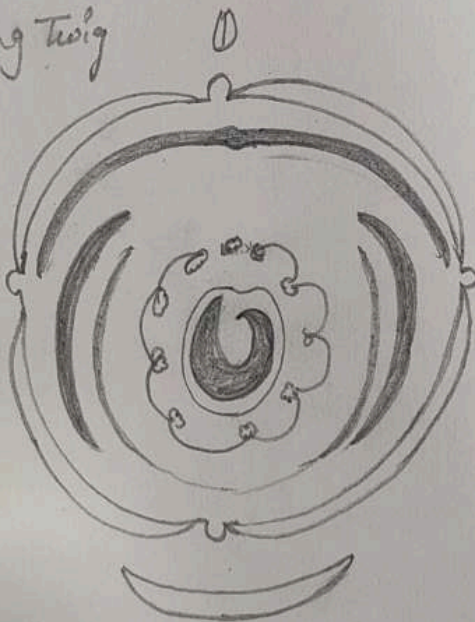
Division - Thacodyner
 class - megnalopsida
 Order - fabales
 family - fabioceus
 Genus - Lathyrus



A flowering twig



L.S flower



Floral Diagram

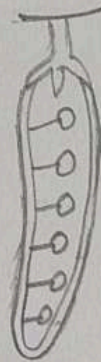


Fig: Lathyrus Odoratus

Ver
 28/1/23

Salanaceae

Aids for Identification: Herbs or shrubs, flowers 5-merous, ovary 2-locular or falsely 3 to 5 locular, fruit berry.

Solanum nigrum L

Habit: A small, annual herb, attaining a height of 1-3 feet.

Roots: Branched, Taproot.

Stem: Herbaceous but woody below, erect cylindrical, branched,

Solid, dark green, slightly ridged.

Leaf: Ramal 2 cauline, simple, alternate but opposite in floral region, exstipulate, petiolate, ovate to orbicoid

Influence: Extra axillary scarpoid cyme called whipidum.

flower: Ebracteate, bracteolate. Petiolate, Complete Hermaphrodite

Actinomorphic may be slightly zygomorphic

Calyx: Sepals 5, gamosepalous may be valvate. Persistent, green.

Corolla: Petals 5 gamopetalous, valvate, white rotate.

Androecium: Stamen 5, Polyandrous, epipetalous, filament short but fused but slightly united to form cone-like.

Вуносімі: Вісцреліау, Syncaurus, Superion, bicaloun, axile.

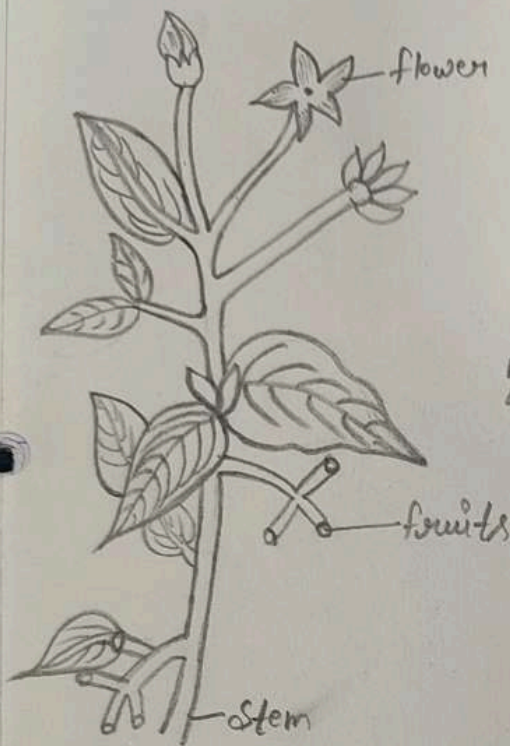
Placentation : many ovules in each locule.

fruit: A Berry!

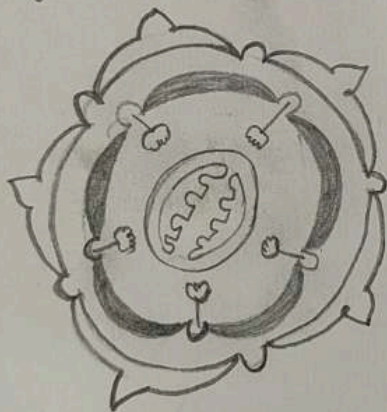
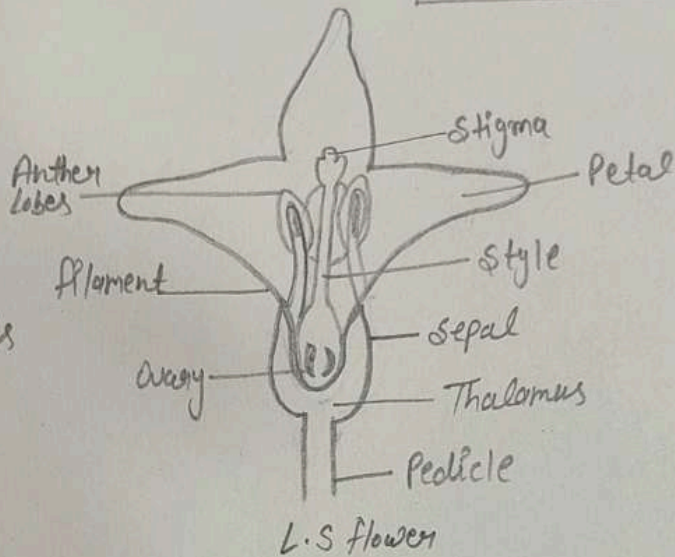
Seed: Many small endospermic

Flaxial formula: $E_{br}, \oplus, \overset{\uparrow}{\underset{\uparrow}{Q}}, 1K_{(5)}, \overline{C_{(5)}}, A_{5-}, (re_2)$

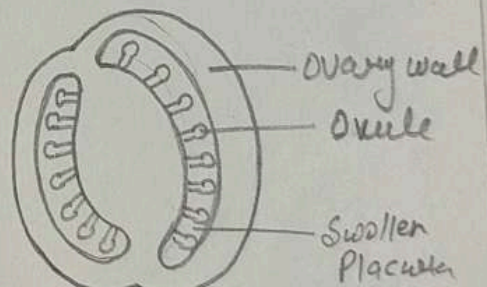
Division - Tracheophyta
 class - Magnoliopsida
 Order - Solanales
 family - Solanaceae
 Genus - Solanum



A flower Twig



Floral Diagram



T.S Ovary

fig: Solanum Nigrum

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 23/11/23

Acanthaceae

Aids for identification: Herbs or trees, leaves, opposite, decussate.
Inflorescence axillary racemose, spike cyme or verticillaster.
Flower bilipped, Seeds with jaculater.

Adhatoda Vasica

Habit: Annual herb

Root: Branched, tap root

Stem: Herbaceous, erect, branched, cylindrical, green to pale green

Leaf: Ramal and Cauline, simple, estipulate, opposite, decussate,

Petiolate, Lanceolate to ovate, entire, acute.

Inflorescence: Axillary racemose spike.

Flower: Bracteate, Bracteolate, leafy and sub-sessile Complete
hermaphrodite, zygomorphic pentamerous, large, white

Calyx: Sepals 5, Polysepalous but slightly connate at base.

Corolla: Petals 5, gamopetalous, bilipped. Consisting of a
Posterior curved lip of two petals and an anterior lip
of three petals, anterior most middle petals.

Androecium: Stamen 2, Polyandrous, epipetalous.

Gynoecium: Bicarpellary, syncarpous, Superior, bicolour Carpels
medially placed, axile Placentation.

Fruit: Capsule.

Seed: Large non-endospermic and provided with i.e. faal

Floral formula: $\text{Br}, \text{BrL}, \text{K}_5, \text{A}_2 \text{C}_{213}, \text{Co}_{(2)}$

Division - Tracheophyta
 Class - Megarodopsida
 Order - Lamiales
 Family - Antheraceae
 Genus - Thuticier

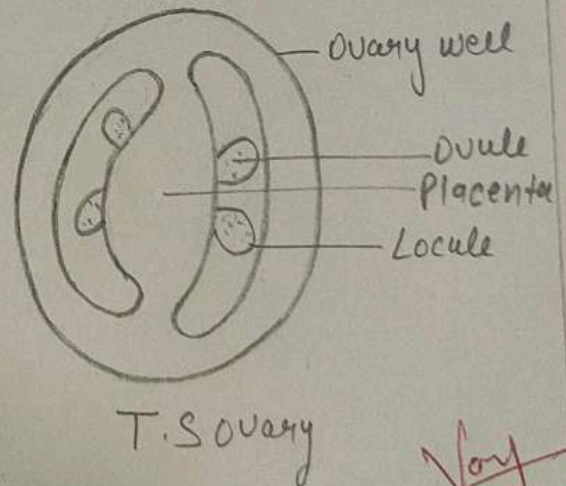
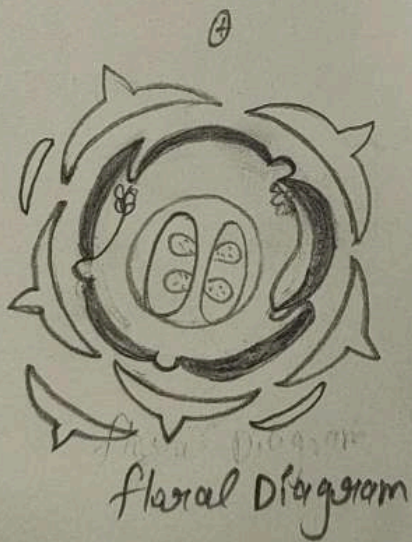
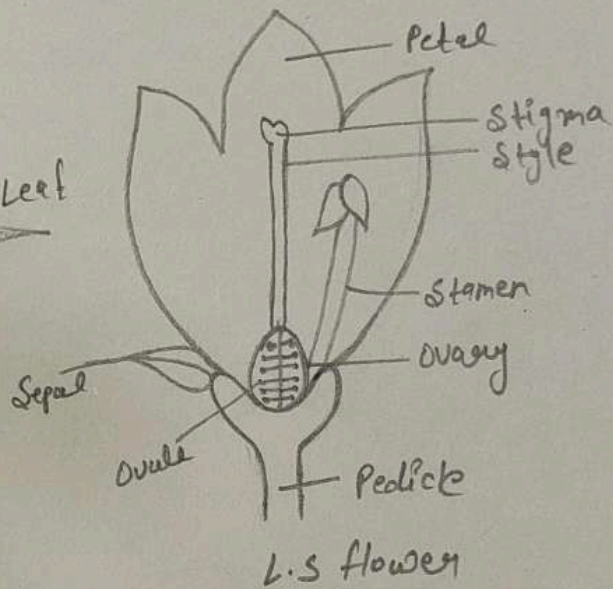
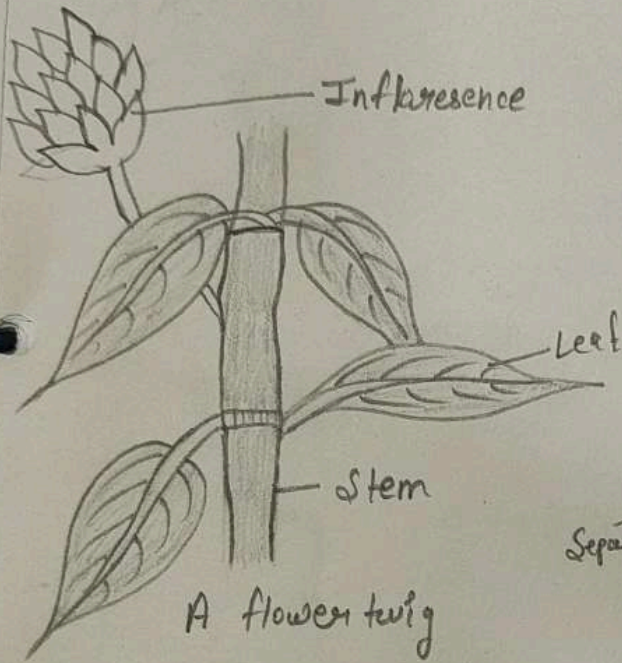


Fig : Adhatoda Vasica

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Lamiaceae or Labiatae

Aids for identification: Perennial herbs, often, form
Corms, bulbs or rhizome, Perianth, Showy, Scented
Leaves, Inflorescence Verticillaster.

Ocimum Basilicum Linn.

Habit: A cultivated, aromatic, tall herb.

Root: Branched, tap root.

Stem: Herbaceous but woody below, erect, quadrangula
Branched, green aromatic.

Leaf: Ramal and Cauline exstipulate, Petiole, opposite.

Decussate, Simple, ovate, serrate, hazy reticulated

Inflorescence: Verticillaster.

Flower: Bracteate, Ebracteate, Pedicellate, Complete.

Herbmaephromatic, zygomorphic hypogynous, Small

Calyx: Sepals 5, bilipped 4 lobe upper posterior lip
1 lobe anterior

Corolla: Petals 5, 1/4 bilipped, upper posterior lip of 4
lower anterior lip of 1 lobe.

Androecium: Stamen 4, Polyandrous, Posterior stamen lacking,
anther lobe broad and slightly separated.

Gynoecium: Bicarpellary, syncarpous, Superior, each locule with
one ovule, axile Placentation.

Fruit: Schizocarpic, made of four Nutlets.

Seed: four, non-endospermic.

Floral formula: $\text{Br}, \text{Ebr.l}, \text{O}, \text{O}_4^+, \text{K}_{(1+4)}, \text{C}_{(4/1)}, \text{A}_{2+2}, \text{G}_{(1)}$

Phylum - Magnoliophyta
 Class - Magnoliopsida
 Order - Lamiales
 Family - Lamiaceae
 Genus - Ocimum

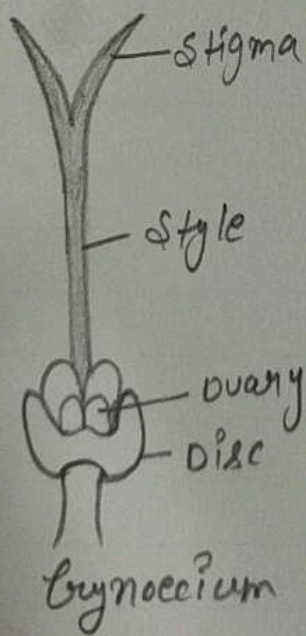
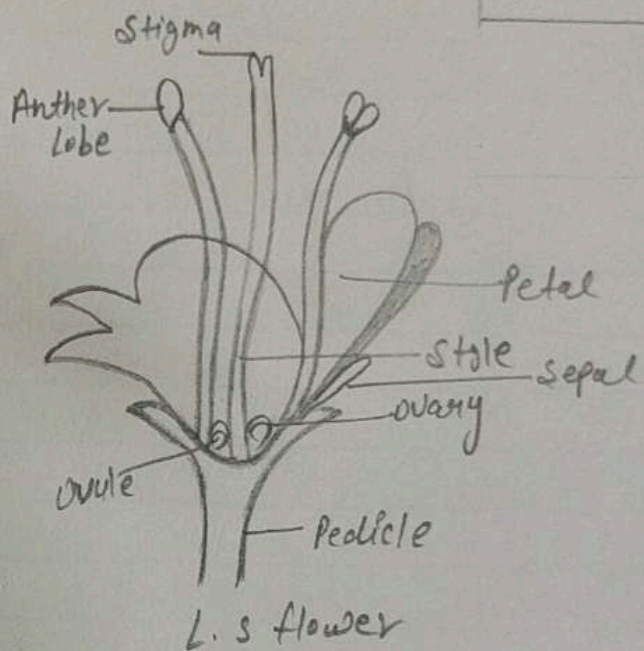
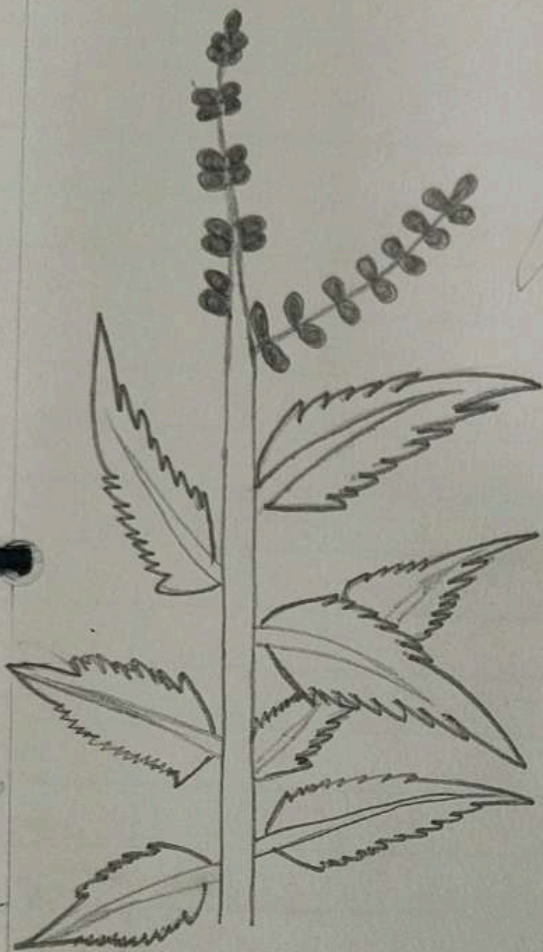


Fig: Ocimum Basilicum Linn

Date: / /

Lxara Coccinea L.

Habit: A small herb

Root: Branched, Tap root.

Stem: Herbaceous, erect, branched, cylindrical, green.

Leaf: Ramal and cauline, simple, opposite, decussate.

Stipulate sessile, ovate to elliptical, entire, acute, reticulate, green.

Inflorescence: Corymbose, cyme.

Flower: Bracteate, pedicellate, complete, hermaphrodite, actinomorphic, tetramerous, large, showy.

Calyx: Sepals 4, gamopetalous, twisted, long, slender.

Androecium: Stamen 4, polyandrous, epipetalous, and alternipetalous, dithecous.

Gynoecium: Bicarpellary, syncarpous, inferior bicellular. Two ovules in each locule, axile placentation.

Fruit: A Berry.

Seed: Small, endospermic.

Floral formula: $\text{Br}, \oplus, \overset{\uparrow}{\underset{\downarrow}{\text{♀}}}, K_{(4)}, C_{(4)}, A_4, \bar{G}_{(2)}$

Kingdom - Plantae
 Order - Gentianales
 Family - Rubiaceae
 Genus - Coccinea.

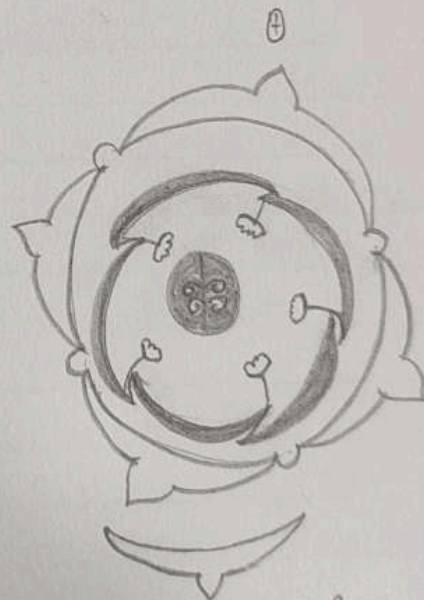
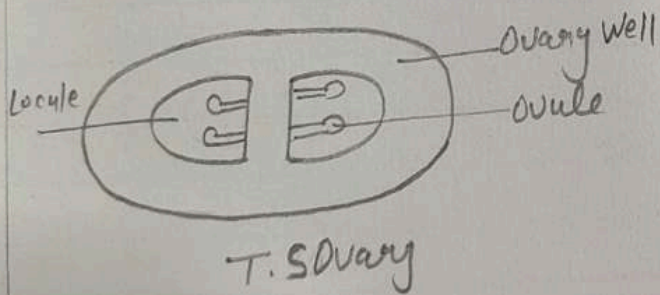
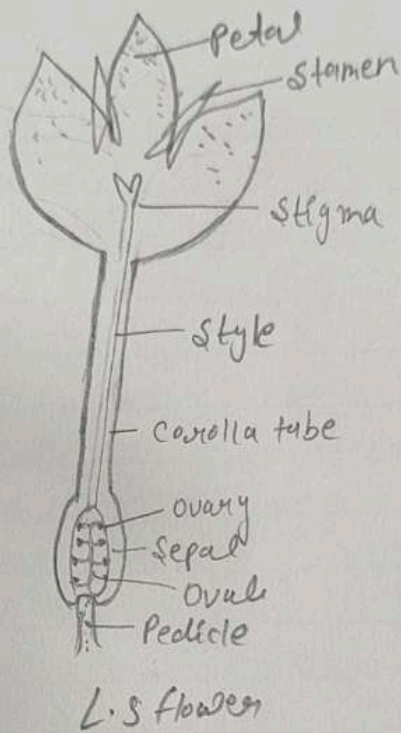
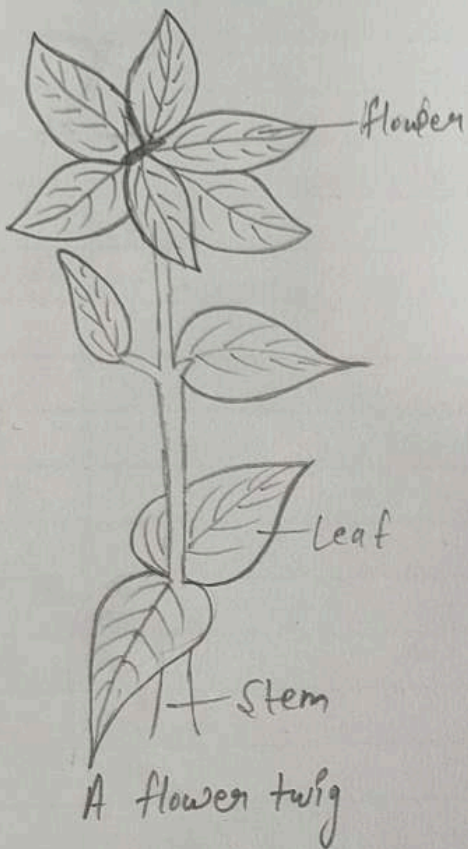


fig: Lxora coccinea

Very
 28/11/23

Date: / /

Poaceae or Gramineae

Aids for identification: Herbs, Stem with hollow, Internode jointed, Leaves mostly flat and 2 ranked, Leaf sheath usually open, fruit Caryopsis.

Triticum aestivum L

Habit: An annual cultivated, cereal crop.

Root: Fibrous, adventitious.

Stem: Herbaceous, erect, cylindrical, Unbranched but rarely branched, nodes and internodes are very clear.

Leaf: Radical when young, but cauline later on, linear to lanceolate, entire, acuminate, multicostate, parallel.

Inflorescence: Spike of spikelets, Each spikelets consist of many.

Flower: Bracteate, Bracteolate, sessile, complete, homothallic, zygomorphic, hypogynous small and inconspicuous.

Perianth: Reduced into two modified, fleshy, small.

Androecium: Stamen 3, Polyandrous, ditheceous, versatile.

Gynoecium: Stamen Monocarpellary, one ovule in the locule, Marginal Placentation, style, absent, stigma two.

Fruit: Caryopses

Seed: Endospermic

Floral formula: $\text{Br}, \text{BrL}, \text{O}, \text{P}_2, \text{A}_3; \text{G}_1$

Division - Magnoliophyta
 Class - Liliopsida
 Order - Cyperales
 Family - Poaceae
 Genus - *Triticum*

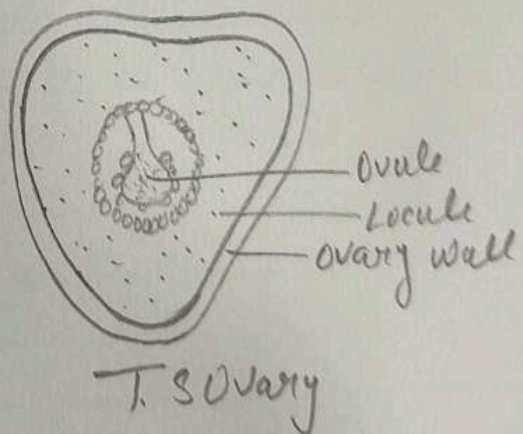
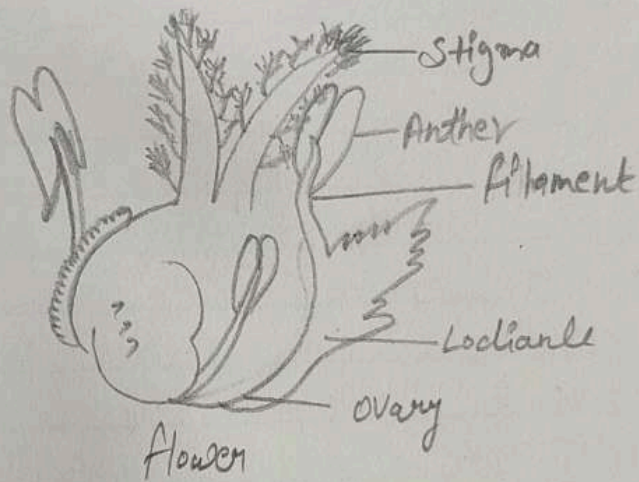
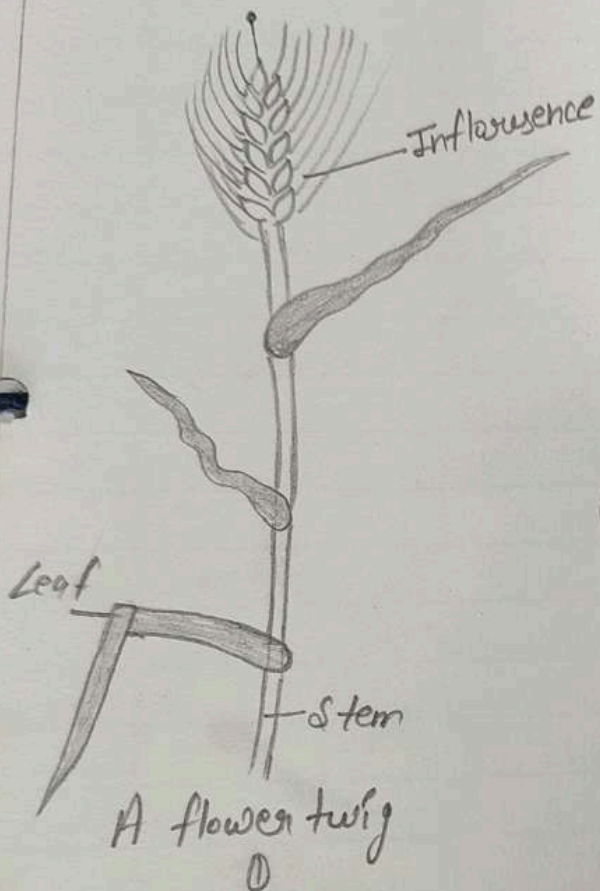


fig: *Triticum Aestivum*

Vary
 23/11/23

Date: / /

Tamarindus Indica L

Habit: A Large tree

Root: Branched, tap root, deep-feeder.

Stem: Woody but herbaceous at the upper portion, erect cylindrical, branched, solid, lower portion covered by base.

Leaf: Ramal and cauline alternate, Petiolate, exstipulate.

Leaflets: 10-20 or more pairs, alternate or opposite.

Petiolets, oblong or elliptical, entire, Unicostate, reticulate.

Inflourence: Racemose raceme.

Flower: Bracteate, bracts, bracteolate Pedicellate, Complete hermaphrodite, zygomorphic, white to yellow color.

Calyx: Sepals 5, Palyssepalous two posterior sepals, Conate, odd sepal is anterior, imbricate.

Corolla: Petals 5, Palypetalous, two anterior petals red to white. Scales, two laterals are ovate, imbricate.

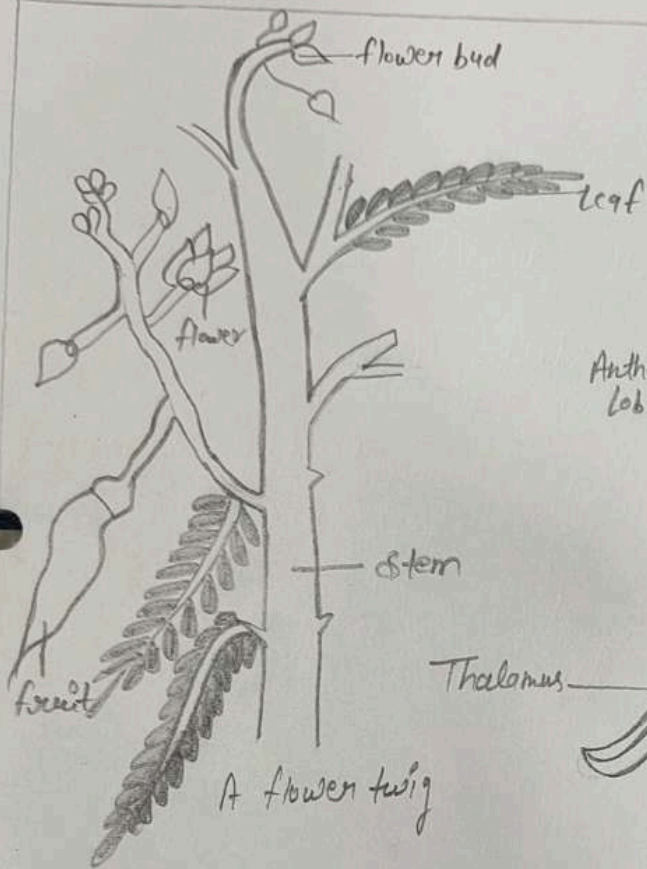
Androecium: Stamen 7, three well developed stamens. Perianth alternately with four staminodes, ditheous, versate.

Gynoecium: Monocarpellary, Seminferior or Superior.

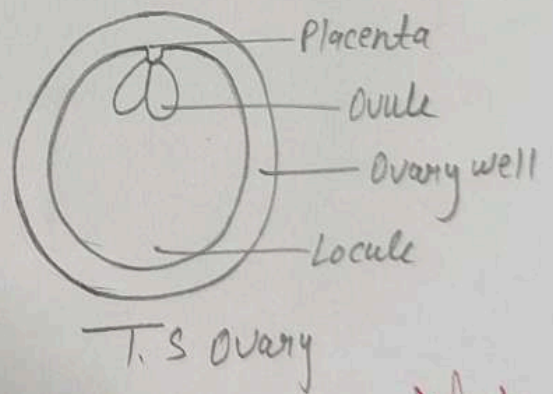
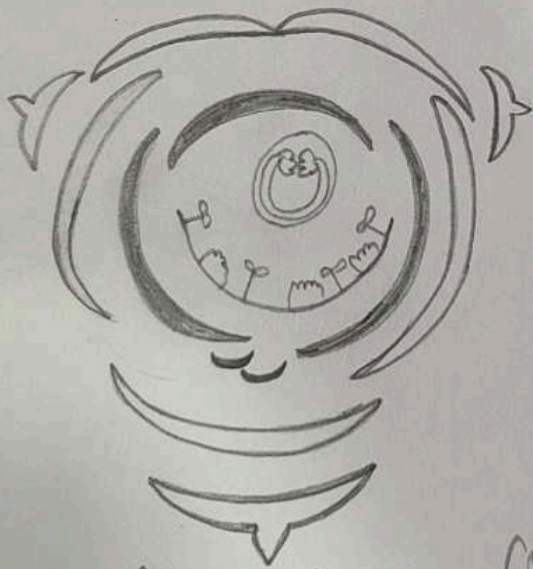
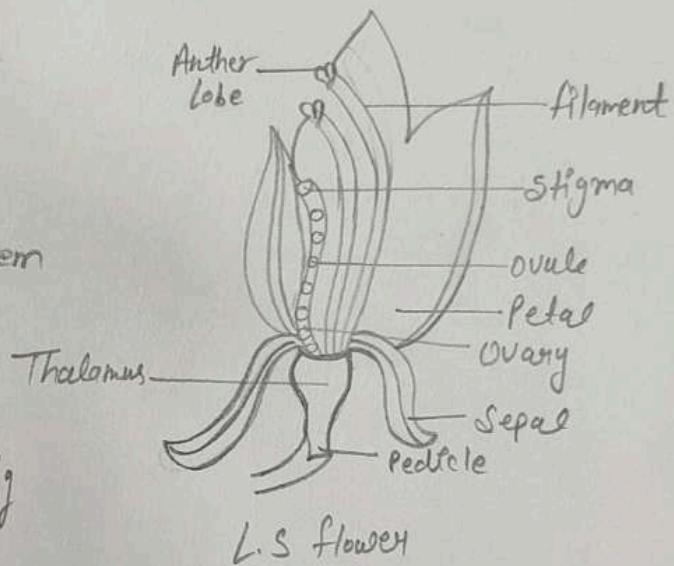
Many ovules, marginal Placentation, ovary stigma flat

fruit: A Legume

Floral formula: $B_n, B_{n-1}, 0, \overset{\uparrow}{\underset{\uparrow}{\text{G}}}, K_{(2+3)}, C_{3+2}, \text{caly}, A_{3+4} \text{ staminodes}, G_1 \text{ or } 1.$



Division - Tracheophyta
 Class - magnoliopsida
 Order - fabales
 family - fabaceae
 Genus - Tamarindus



Floral Diagram fig: Tamarindus indica L.

Vant
 23/11/23