Study Of Character Of Plant Specimens And Identification With Reasons

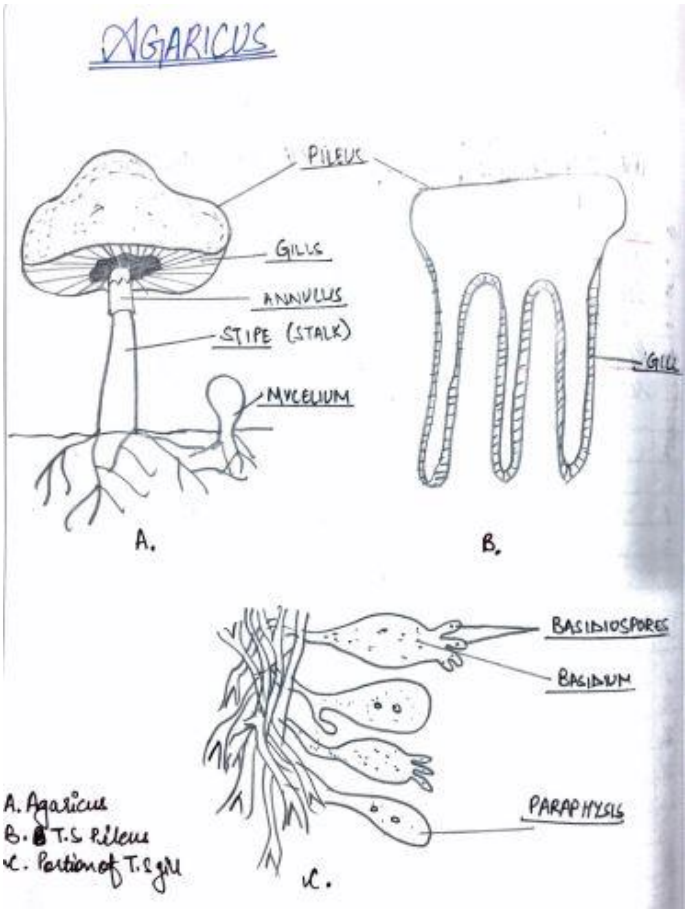
AIM: Study of character of : Spirogyra, Rhizopus, Mushroom/Bracket fungi, Liver wort, Moss, Fern, Pinus, One Monocotyledon, One Dicotyledon, Yeast & lichens.

REQUIREMENTS: Prepared slides or preserved specimens, record file, pencil, a laboratory guide etc

AGARICUS (MUSHROOM)

Classification: -

- Kingdom – Fungi
- Division – Eumycophyta
- Class – Basidiomycetes
- Genus – Agaricus
- Species – Compestris



COMMENTS: It is a saprophytic fungus that grows in hum & rich soils piles of straw & rotting wooden logs

It has septate mycelium under the substratum. The mycelium produces white & creamy coloured umbrella shaped ‘ fruit bodies’ or ‘basidiocarp’ above the substratum.

Pileus is circular, umbrella like & bear a number of vertical plate like structure called gills.

DIAGNOSTIC FEATURES: The fruiting body is umbrella shaped

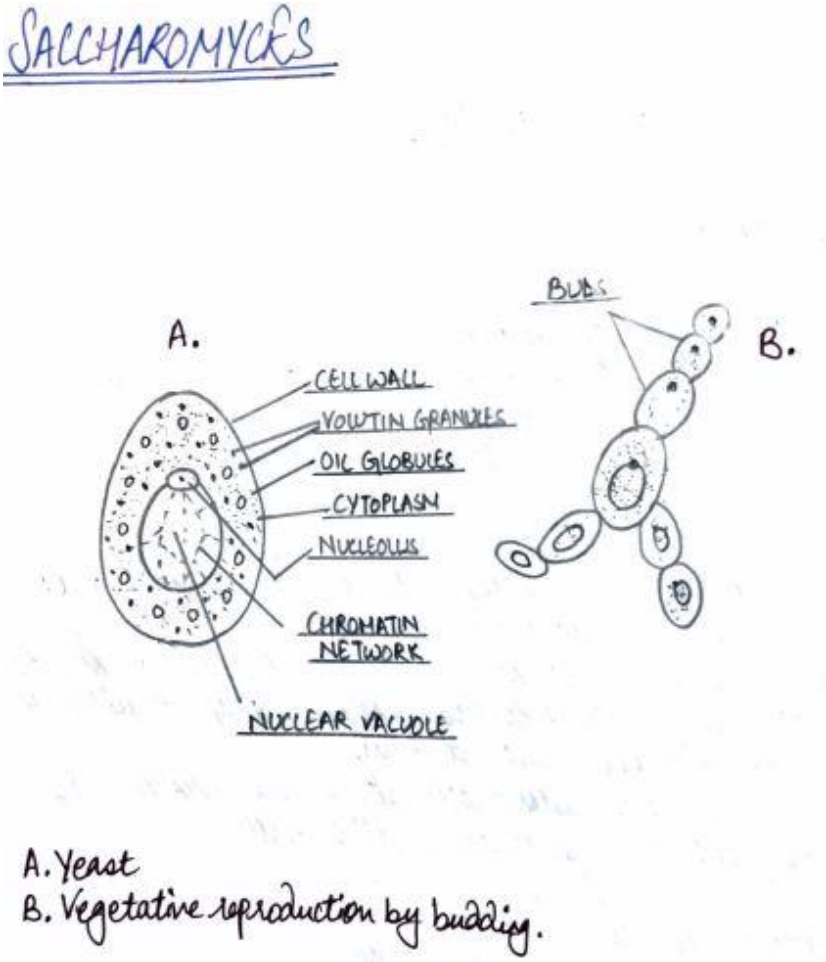
Gills are present on the lower side of the pileus

SACCHAROMYCES (YEAST)

Classification:-

- Kingdom – Fungi
- Division – Eumycophyta
- Class – Ascomycetes
- Genus – Saccharomyces sp.

SACCHAROMYCES



A. Yeast
B. Vegetative reproduction by budding.

COMMENTS: It is commonly found growing in sugary medium such as fruit surface, nectar, cane juice etc

It is unicellular but may form a ‘pseudomycelium’ by repeated budding

Yeast cell is oval or elliptical in shape with a distinct cell wall made up of chitinous material

Volutin granules & glycogen droplets are present as reserve food in cytoplasm

DIAGNOSTIC FEATURES : Unicellular

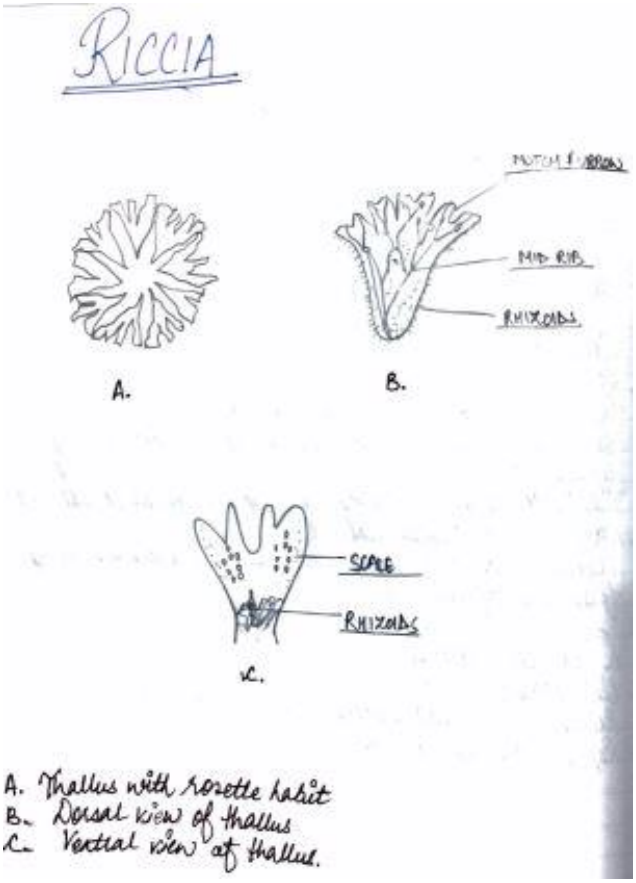
Presence of nuclear vacuole

Reproduction by budding

RICCIA (LIVERWORT)

Classification :-

- Kingdom – Plantae
- Division – Bryophyta
- Class – Hepaticeae
- Genus – Riccia



COMMENTS: The plant body is a dorsoventrally flattered & dichotomously branched thallus. It may form a rosette due to repeated dichotomous branching of thallus

Scales and rhizoids are present on the ventral surface. Scales protect the growing apex and retain moisture

Rhizoids are unicelluclar, colourless and tabular. They help in anchorage & absorption

The thallus represents haploid gametophytic stage

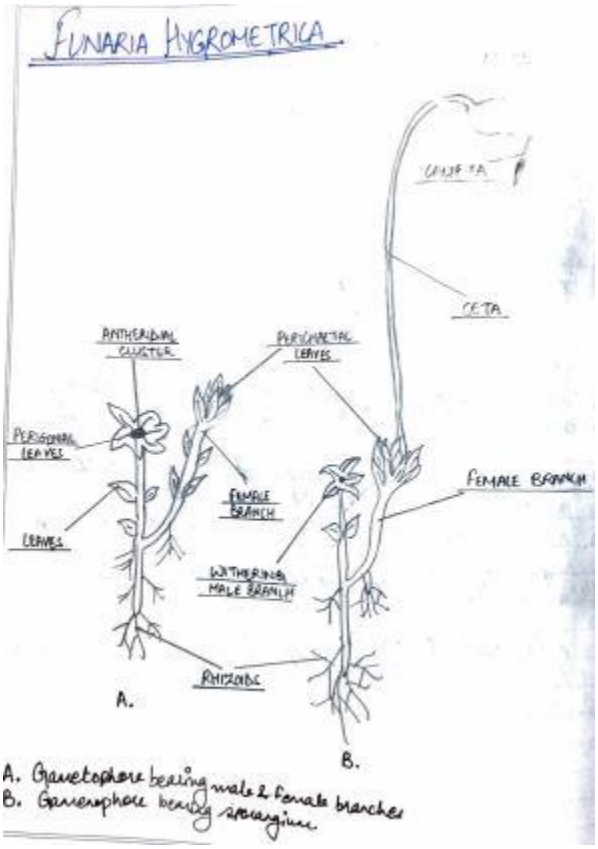
DIAGNOSTIC FEATURES: Plant body is a thallus with repeated dichotomous branching

Sex organs & sporophyte embedded in the thallus

FUNARIA HYGROMETRICA (MOSS)

Classification:-

- Kingdom – Plantae
- Division – Bryophyta
- Class – Musci
- Genus – Funaria
- Species – Hygrometrica



COMMENTS: The plant body is gametophyte. It is green, erect & is differentiated into rhizoids, axis (stem) & leaves

Rhizoids are multicellular and branched with oblique septa

The main axis is erect and bears spirally arranged lenses

Sporophyte is differentiated into foot, seta & capsule

DIAGNOSTIC FEATURES: Gametophyte is represented by a filamentous protonema & adult leafy gametophyte

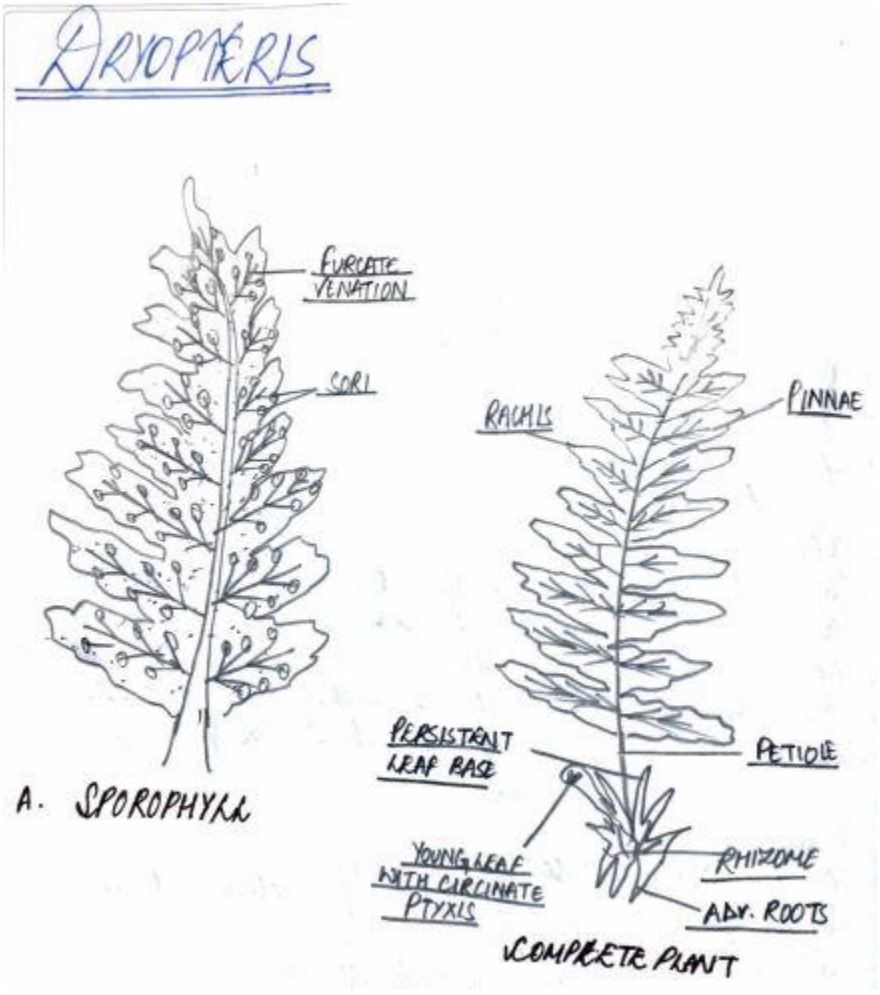
Rhizoid branched and obliquely separate

Sporophyte is a partial parasite upon the gametophyte

DRYOPTERIS (MALE FERN)

Classification:-

- Kingdom – Plantae
- Division – Pteridophyta
- Class – Filicinae
- Genus – Dryopteris



COMMENTS: The plant body is sporophyte & is differentiated into root, stem (underground rhizome) & pinnately compound leaves

The young leaves have circinate ptyxis & are covered with hair called ramenta

The spores are haploid which give rise to heart shaped membranous gametophyte called prothallus

DIAGNOSTIC FEATURES: Stem is rhizome

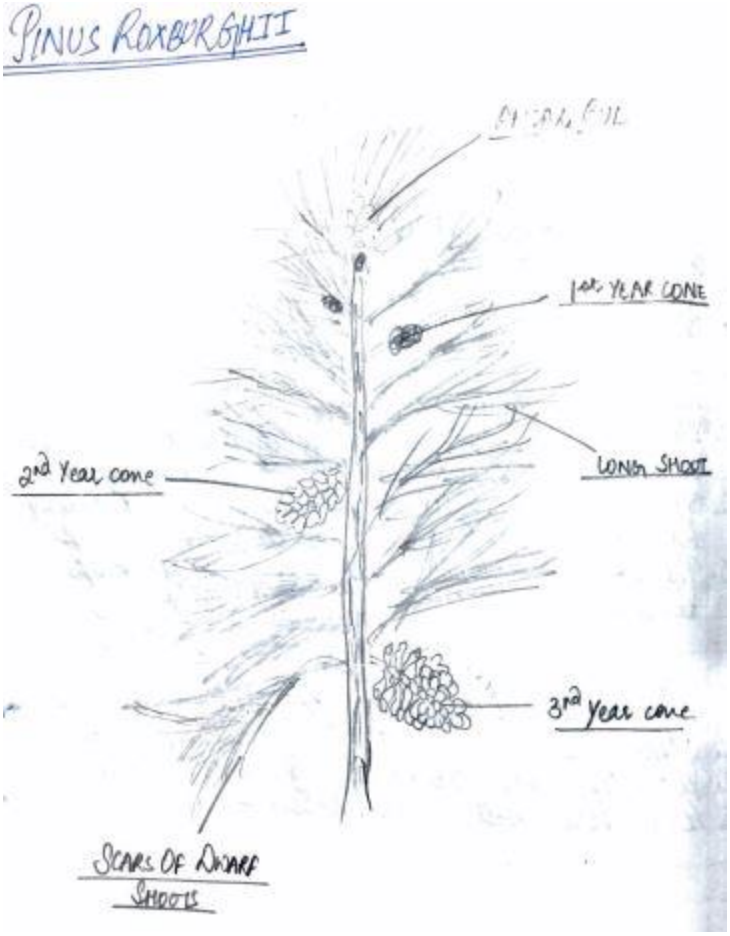
Young leaves have circinate ptyxis & bear rementa

Leaves pinnate with furcate venation

PINUS ROXIBURGHI (CHIR)

Classification:-

- Kingdom – Plantae
- Division – Spermatophyte
- Class – Gymnospermae
- Genus – Pinus
- Species – Roxburghii



COMMENTS: Stem is covered with bark & bears types of branches long shoots and dwarf shoots. The long shoots bear scale leaves & grow indefinitely by apical bud, whereas dwarf branches bear scale leaves & foliage leaves are of limited growth.

Pinus tree is monoecious & bears both male & female cones

The plant body is sporophyte. Differentiated into root, stem & leaves.

DIAGNOSTIC FEATURES: Evergreen, woody, perennial tree

Seeds are naked

Presence of long shoots & dwarf shoots

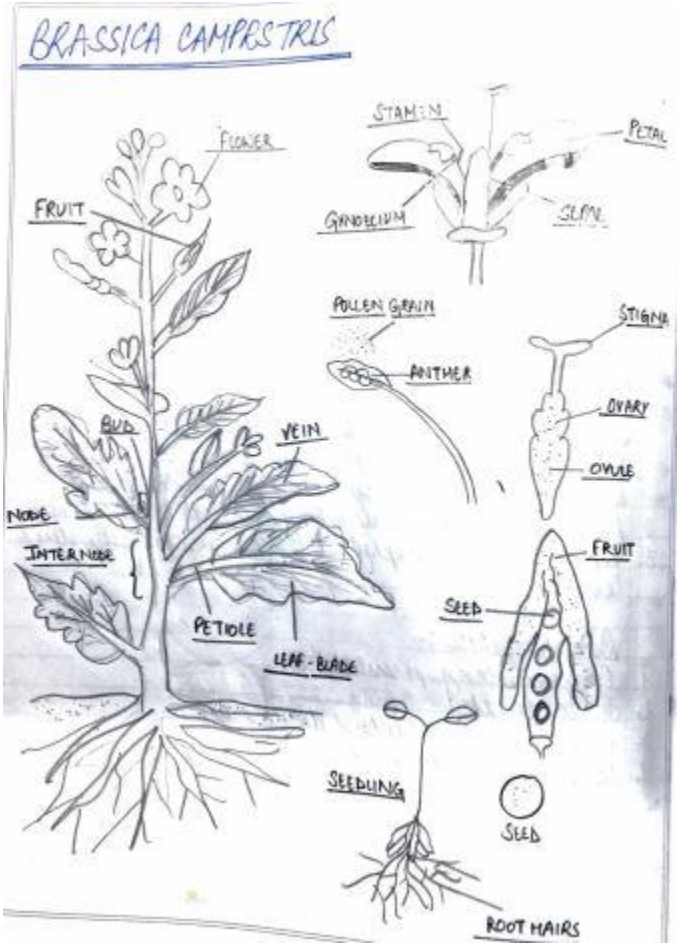
Reproductive organs are cones

DICOTYLEDONOUS PLANT

- **BRASSICA CAMPESTRIS**

  Classification:-

- Kingdom – Plantae
- Division – Spermatophyta
- Class – Angiospermae
- Sub class – Dicotyledonous
- Species – Campestris



COMMENTS: Stem is soft green with distinct nodes & internodes

The leaves are alternate sessile, simple with lobed margin & reticulate venation

It bears colour yellow flower for reproduction. Each flower is bisexual & bimerous with cruciform corolla

DIAGNOSTIC FEATURES: Tap root system

Leaves with reticulate venation

Binerous flowers

Seeds are enclosed in fruits

Embryo with two cotyledons

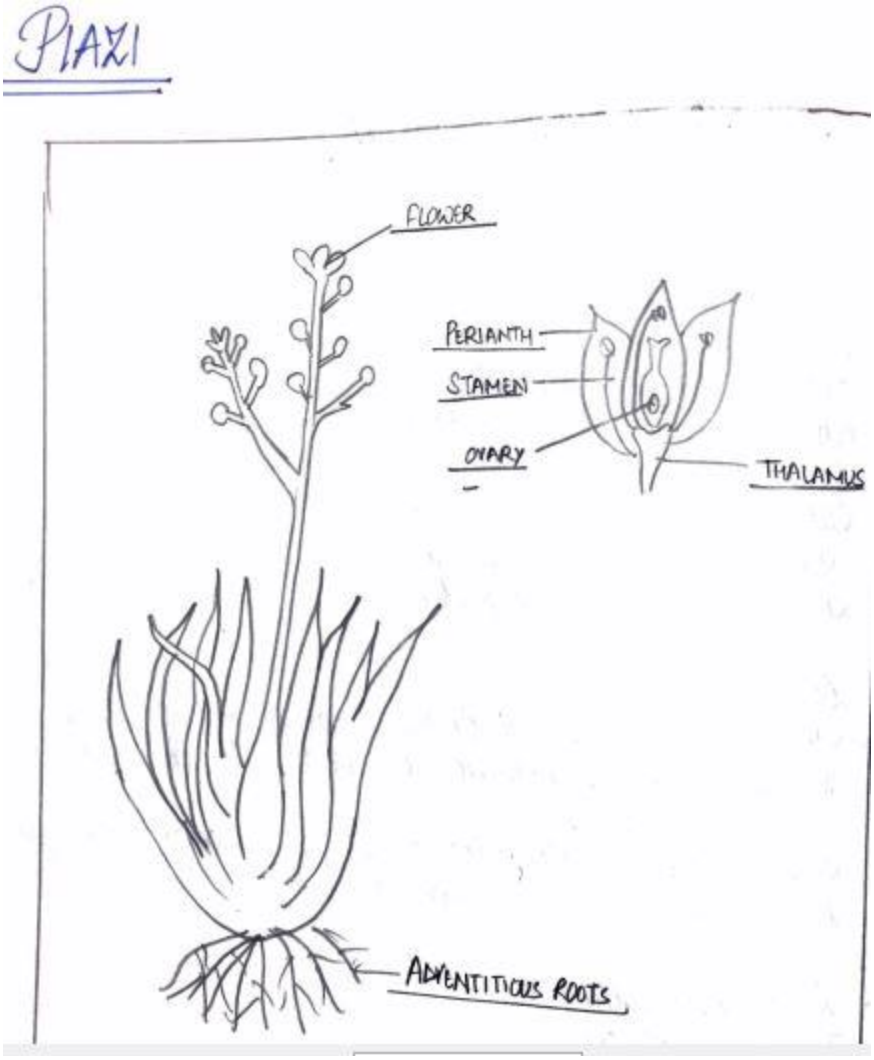
MONOCOTYLEDONOUS PLANT

- **SPHODELOUS TENEUFOLIUS (PIAZI)**

Classification:-

- Kingdom – Plantae
- Division – Spermataophyta
- Class – Angiospermae
- Sub class – Dicotyledonae
- Genus – Sphodelous
- Species – Teneufolius

PIAZI



COMMENTS: It bears adventitious root system

Leaves are bone in cluster. Each leaf is cylindrical, hollow &has parallel variation

The seed enclosed an embryo with only one cotyledon

DIAGNOSTIC FEATURES: Adventitious root system

Leave with parallel venation

Flowers trimerous

Seeds enclosed in fruits

Embryo with one cotyledon

LICHENS A SYMBIOTIC ASSOCIATION)

Lichens are composite organisms representing a symbolic association between a fungus & an alga

Lichens grow on lands, rocks, tree trunks & walls of houses, like dry vegetation

The thallus of lichen resembles neither alga nor fungus

In a lichen thallus the algae individual called mycobiant belongs to ascomycetes or basidiomycetes

Phycobient belongs to chlorophyceae or mynophycaea

Lichen reproduces vegetatively by fragmentation, asexually by soredia & isidia

Sexual organs like those in Ascomycates are formed