STD VI

ABOUT FLOWERING PLANTS.

Q1. HOW ARE FLOWERING PLANTS CLASSIFIED?

A1.FLOWERING PLANTS ARE CLASSIFIED ACCORDING TO THEIR TYPE AND SIZE OF STEM.

*THEY ARE CLASSIFIED INTO HERBS ,SHRUBS AND TREES.

Q2. DIFFERENTIATE BETWEEN HERBS , SHRUBS AND TREES AND GIVE TWO EXAMPLE OF EACH

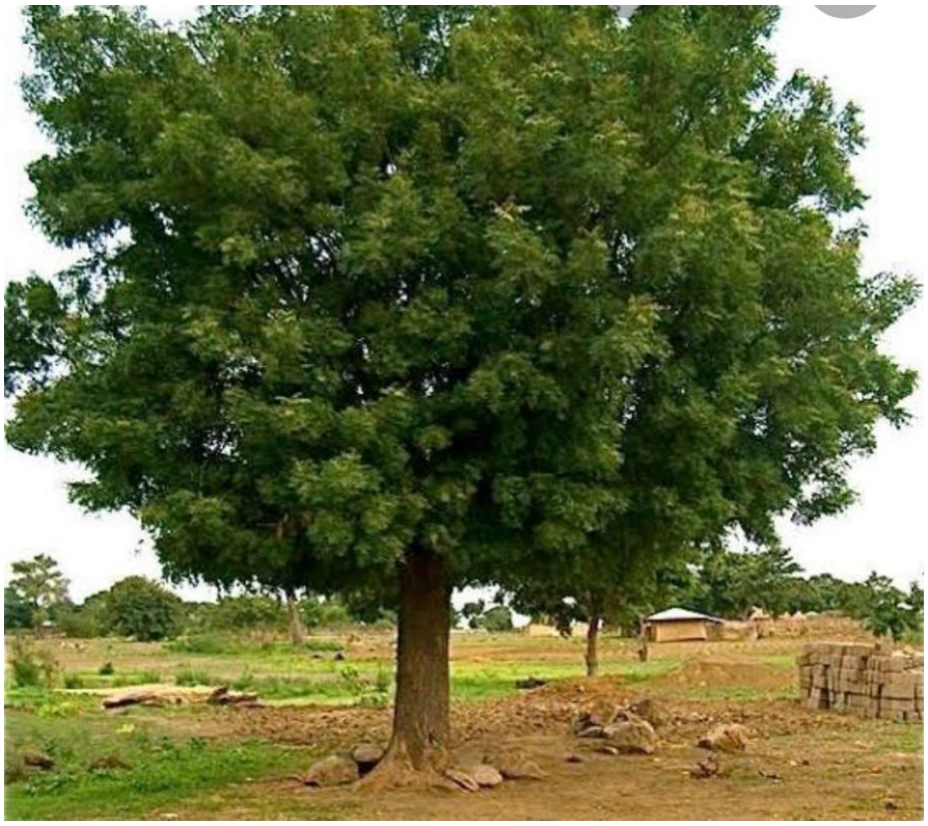
A2.I) HERBS ARE TINY PLANT WITH SHORT AND GREEN STEM. MOST OF THEM ARE ANNUALS

OR BIENNIALS SUCH AS GRASS OR SWEET POTATO.

II) SHRUBS ARE THE PLANTS WHICH CAN GROW UP TO 8 FEET AND HAVE MANY WOODEN BRANCHES. Eg. ROSE , CHINAROSE , HENNA

III) TREES ARE THE THICK AND BIG PERENNIAL PLANTS. THEIR MAIN STEM IS COVERED WITH THICK AND HARD BARK.

Eg. NEEM , BANYAN .



Q3. DEFINE THE TYPES OF ROOTS.

A3.THE TYPES OF ROOTS ARE-

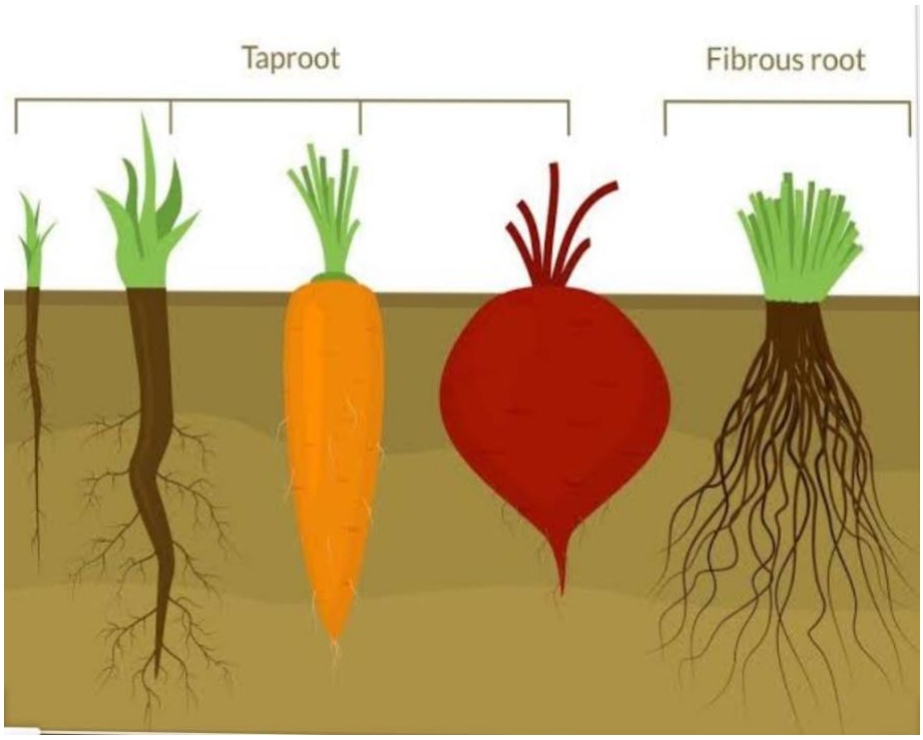
1. TAP ROOT:A TAP ROOT HAS ONE MAIN ROOT WITH MANY TINY ROOT HAIR.

* IT ORIGINATES FROM THE RADICLE OF A SEED.

EXAMPLE : THE ROOTS OF CARROT, GRAM

2. FIBROUS ROOT: THE THIN , FIBRE LIKE, DENSE NETWORK OF ROOTS, ARISING FROM BASE OF STEM.IT DOES NOT ARISE FROM RADICLE.

EXAMPLE: THE ROOTS OF GRASS,WHEAT OR MAIZE.



Q4. WHAT FUNCTIONS DO THE ROOT PERFORM ?

A4. THE ROOT PERFORMS MANY FUNCTIONS SUCH AS:

i) THE ROOT PROVIDES ANCHORAGE AND HELPS THE PLANT TO STAND STRAIGHT IN THE SOIL.

ii) THE ROOT HAIR ABSORB MINERALS AND WATER FROM THE SOIL FOR THE PLANT .

iii)ROOTS AND THE ROOT HAIR TOGETHER BIND THE SOIL AND THUS PREVENT SOIL EROSION.

iii) SOME ROOTS ALSO STORE FOOD IN THEM.

Q5. WHY DO THE ROOTS OF SOME PLANTS GET MODIFIED ? MENTION TWO FUNCTIONS PERFORMED BY THE MODIFIED ROOTS WITH EXAMPLE.

A5. ROOTS OF SOME PLANTS GET MODIFIED FOR CERTAIN PURPOSES SUCH AS :

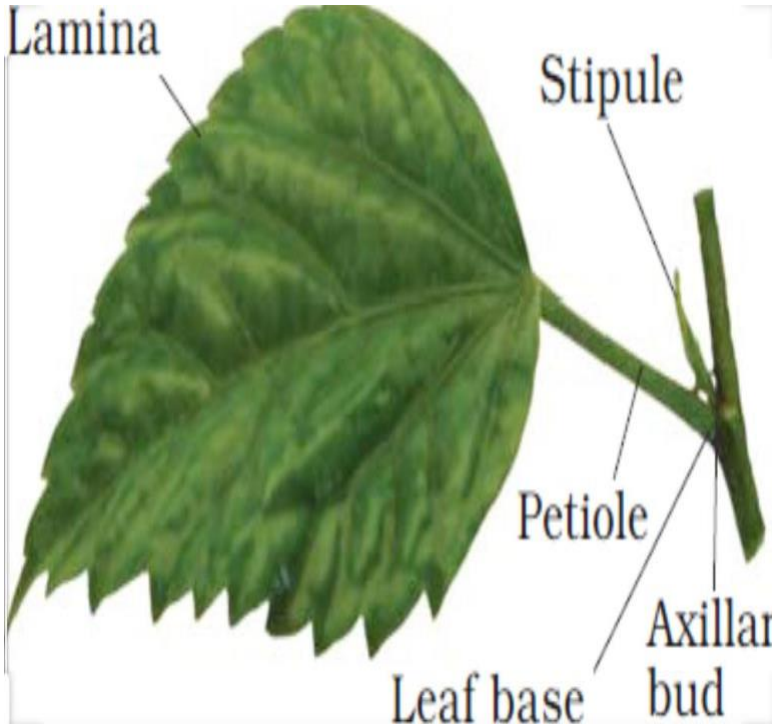
i) STILT AND PROP ROOT OF BANYAN TREE GROW DOWN AND GIVE SUPPORT TO THE TREE

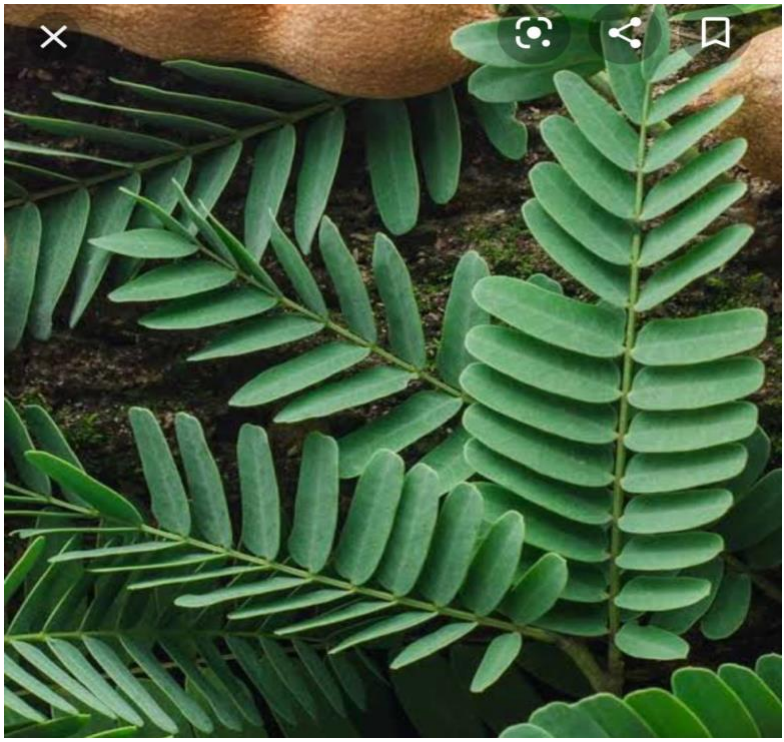
ii) CERTAIN ROOTS ARE MODIFIED TO STORE FOOD SUCH AS CARROT , RADISH , SWEET POTATO.

Q6. DISTINGUISH BETWEEN SIMPLE AND COMPOUND LEAVES.

A6. A SIMPLE LEAF HAS ONE UNDIVIDED LEAF BLADE OR LAMINA AND THERE IS AN AXILLARY BUD AT THE THE BASE OF THE LEAF. Eg. LEAVES OF BANYAN OR PEEPAL

ii) WHEN THE LAMINA OF THE LEAVES GET DIVIDED INTO MANY LEAFLETS THEN IT IS CALLED COMPOUND LEAF. Eg. LEAVES OF TAMARIND (IMLI) , GULMOHAR.





Q7.WHAT FUNCTION DO VEIN SERVE ? NAME THE TWO TYPE OF VENATION SEEN IN LEAVES .

A7. THE VEINS ARE MADE UP OF XYLEM AND PHLOEM THAT HELP IN THE TRANSPORTATION

OF FOOD , MINERAL AND WATER TO AND FROM THE LEAVES.

ii) THE TWO TYPES OF VENATION ARE :

a. PARALLEL VENATION:WHEN THE VEINS RUN PARALLEL TO EACH OTHER, ACROSS A LEAF, IT IS CALLED PARALLEL VENATION. Eg. BAMBOO , SUGARCANE.

b. RETICULATE VENATION: WHEN A LEAF HAS A NETWORK OF AS RETICULATE VENATION.

Eg. NEEM, LEMON.

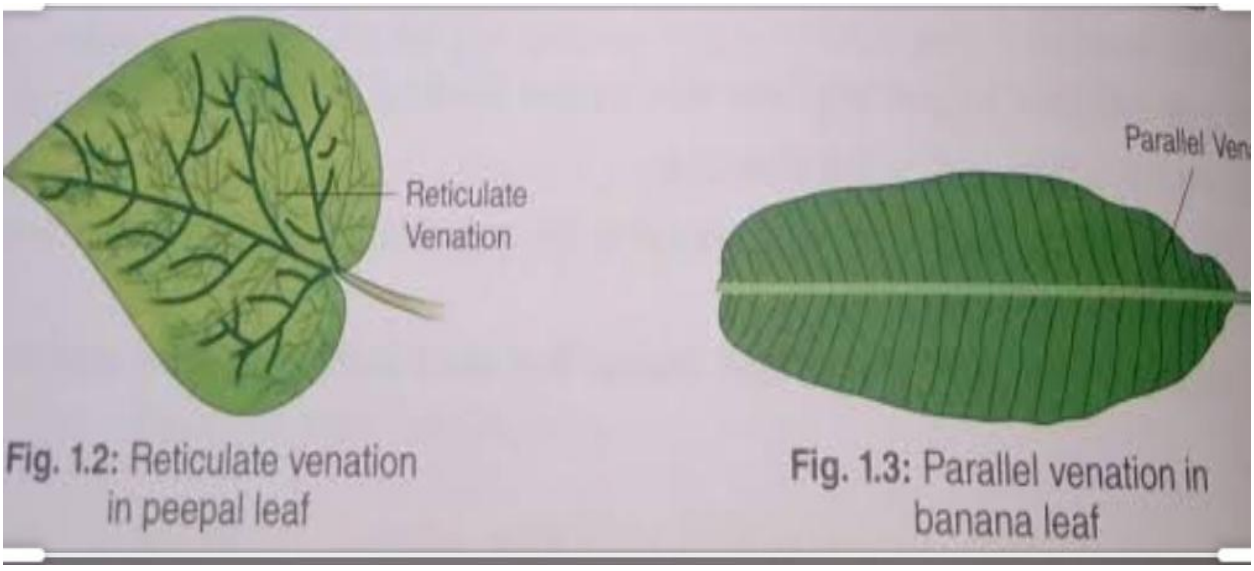


Fig. 1.2: Reticulate venation in peepal leaf

Fig. 1.3: Parallel venation in banana leaf

Q8.WHAT FUNCTION DOES A TYPICAL LEAF PERFORM ?

Q8.THE GREEN LEAVES HAVE GREEN PIGMENT CALLED CHLOROPHYLL WHICH HELPS TO PREPARE FOOD FOR THE PLANT THROUGH THE PROCESS OF PHOTOSYNTHESIS , THUS THE LEAF IS CALLED THE "FOOD FACTORY" OF THE PLANT.

Q9.WHY ARE THE LEAVES OF CACTUS MODIFIED INTO SPINES ?

A9. THE LEAVES OF THE CACTUS ARE MODIFIED INTO SPINES BECAUSE OF THE FOLLOWING REASONS :

i) TO REDUCE THE LOSS OF WATER THROUGH TRANSPIRATION.

ii) TO PROTECT THE PLANT FROM BEING GRAZED.(USED AS DEFENCE).

Q10. WHAT FUNCTION DOES THE STEM PERFORM ?

A10. i) THE STEM BEARS BRANCHES , LEAVES , FLOWERS AND FRUITS.

ii) IT KEEPS THE PLANT STRAIGHT AND HELPS IT TO GROW UP.

iii) THE STEM HAS TWO CHANNELS :

a. XYLEM - FOR CONDUCTING MINERALS AND WATER.

b. PHLOEM - FOR TRANSPORTING FOOD.

iv) CERTAIN UNDERGROUND ROOTS GET MODIFIED TO STORE FOOD.

Q11.BY GIVING EXAMPLES, EXPLAIN THE MODIFICATION OF STEMS.

A11. APART FROM CONDUCTION, TRANSPORTATION OF MATERIALS IN THE PLANT, STEMS ARE MODIFIED FOR OTHER FUNCTIONS ALSO.

1. THE STEMS OF POTATO, ONION ARE MODIFIED TO STORE FOOD.

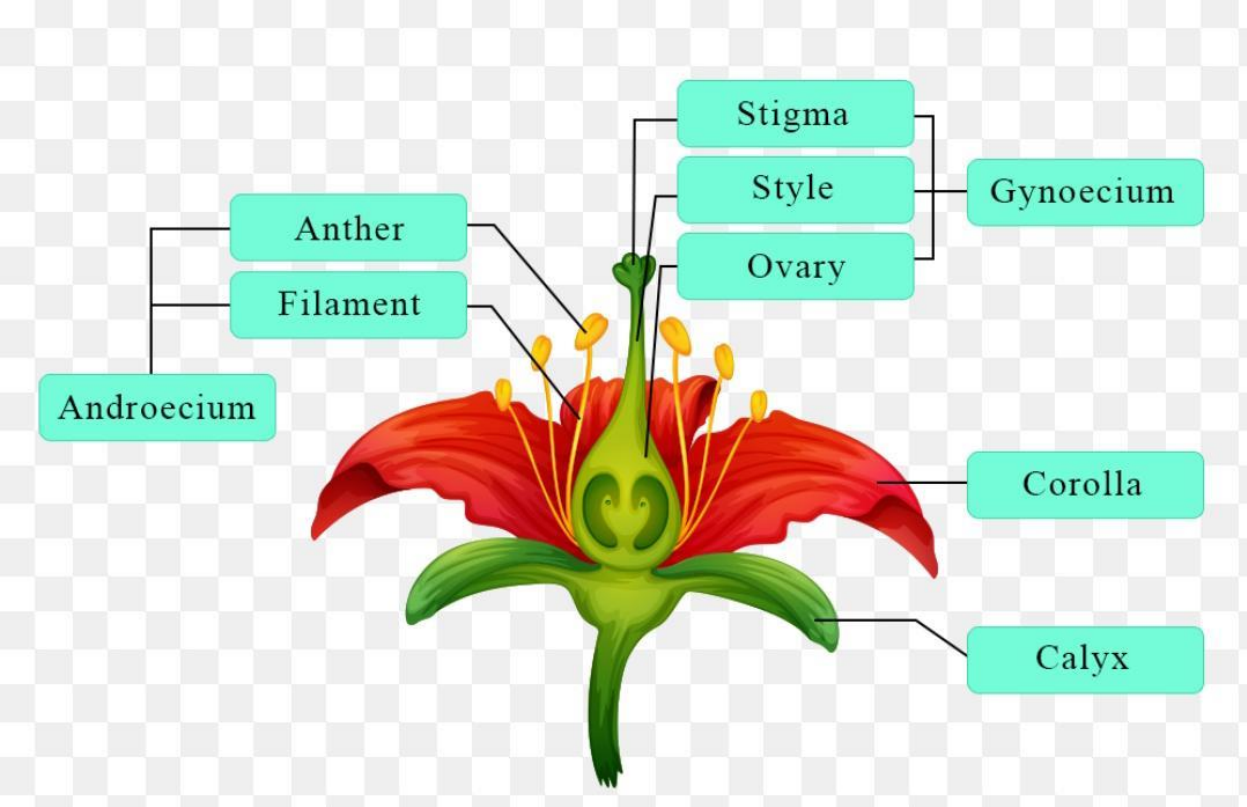
2. TENDRILS ARE THE MODIFICATION OF STEMS IN PLANTS LIKE BOTTLE GOURD , TO PROVIDE SUPPORT AND STRENGTH.

Q13. WHAT IS A WHORL ?HOW MANY WHORLS DOES A FLOWER HAVE ?

A13. i) WHORL IS A CIRCULAR ARRANGEMENT OF PARTS IN A PLANT.

ii) A COMPLETE FLOWER HAS FOUR WHORLS.

iii) THEY ARE CALYX , COROLLA , ANDROECIUM , GYNOECIUM.



Q14. EXPLAIN THE STRUCTURE OF A FLOWER?

A14. A COMPLETE FLOWER HAS FOUR WHORLS :

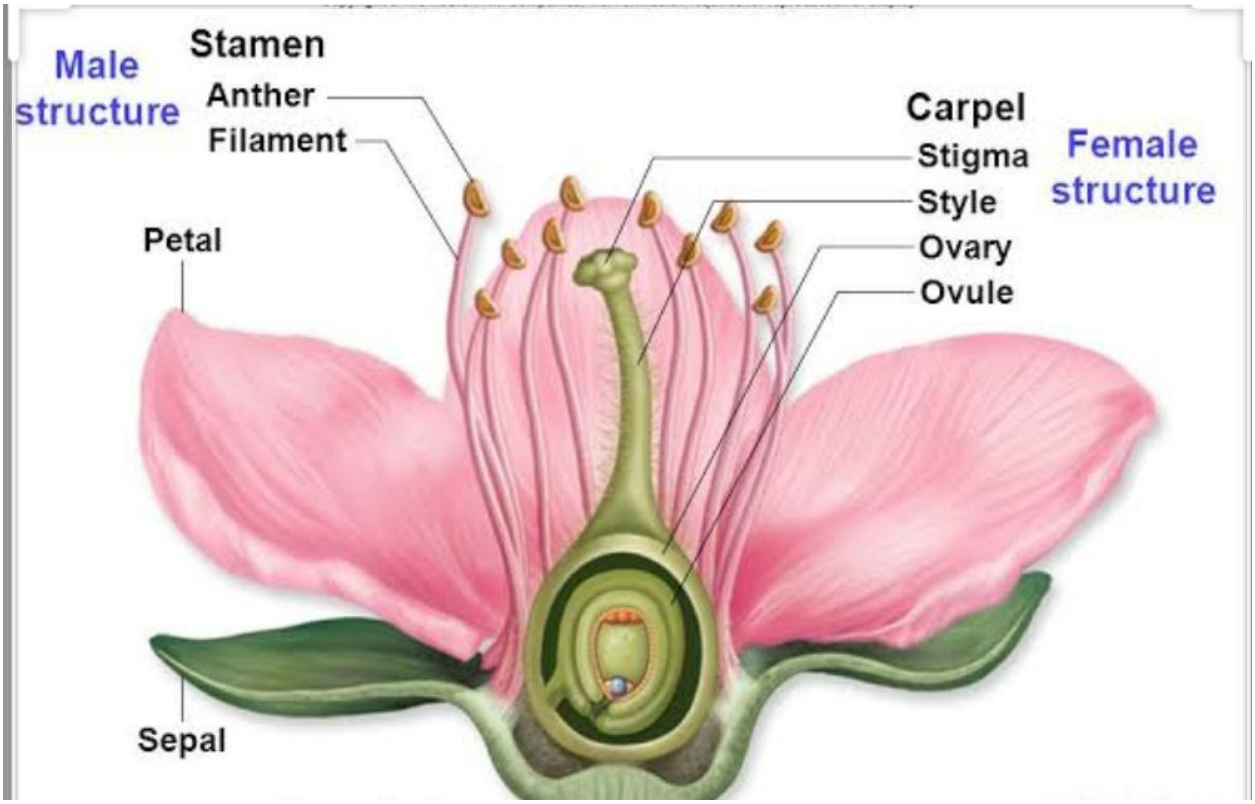
I) CALYX - THE CALYX IS MADE UP OF MANY GREEN SEPALS.THEY PROTECT THE BUD AND ALSO DO PHOTOSYNTHESIS.

II) COROLLA: IT IS MADE UP OF MANY BRIGHTLY COLOURED PETALS, THAT ATTRACT INSECTS FOR POLLINATION.

III)ANDROECIUM: IT IS THE MALE WHORL OF THE FLOWER. IT CONTAINS MANY STAMENS. EACH STAMEN HAS A STALK CALLED FILAMENT AND A SWOLLEN TIP, CALLED ANTHER. THE ANTHER CONTAINS POLLEN GRAINS.

IV)GYNOECIUM:IT IS THE FEMALE WHORL OF A FLOWER AND CONSISTS OF A SWOLLEN OVARY, STYLE AND STIGMA.THE OVARY CONTAINS TINY

OVULES WHICH LATER ON DEVELOP INTO SEEDS.



DO IT YOURSELF

1. WRITE R FOR ROOT MODIFICATION AND S FOR STEM MODIFICATION AND L FOR LEAF MODIFICATION, IN THE FOLLOWING?

I. ONION

II. SWEET PEA

III.TURNIP

IV. PUMPKIN

V. CACTUS

2. DRAW THE DIAGRAM OF TWO PLANTS THAT HAVE ROOTS MODIFIED TO STORE FOOD.