11-Practical's Exams

of Crop Production

Prepared By

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1-Classified Crops According to Mode of Reproduction?

1-Sexual-plants: that develop from a seed. Examples: faba bean, wheat, Rice and corn.

2.Asexual- plants: which reproduce by any vegetative organs: Examples: Sugar cane and Onion.

2-Classified Crops According to Life Span?

1-Annual: produce seed, and die all in one season.

Examples: wheat-rice- corn.

2-Biennial-aplant, which requires two growing seasons to complete its life cycle, Examples: Sugar beet.

3-Perennial- a plant that lives indefinitely, including all trees and shrubs, : Examples: Sugar cane.

3-Write the types of wheat roots? (2 marks)

1-The seminal roots (4-5 roots).

2-The nodal (crown or adventitious) roots.

4-For what leaf wheat consisted of? (3 marks)

Each leaf comprises the sheath, the blade at the junction of the sheath there is the ligule, and the auricles.

5-From what wheat spike includes number of spikelet? And From what wheat spikelet includes number of flowers? (one mark)

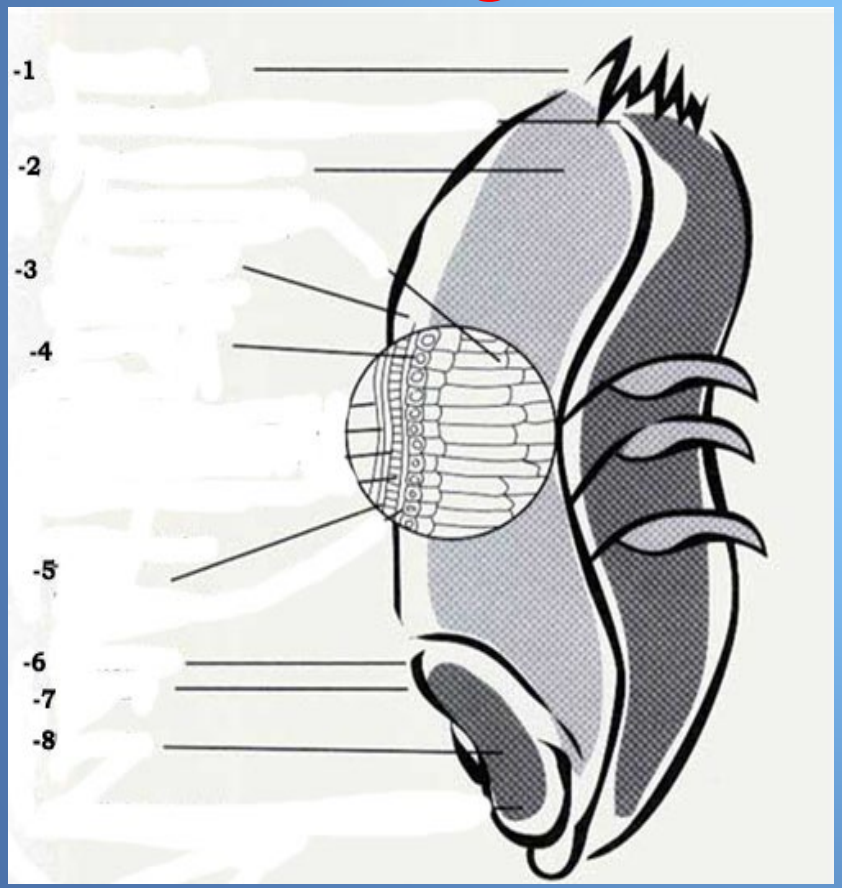
1-20-25 spikelet

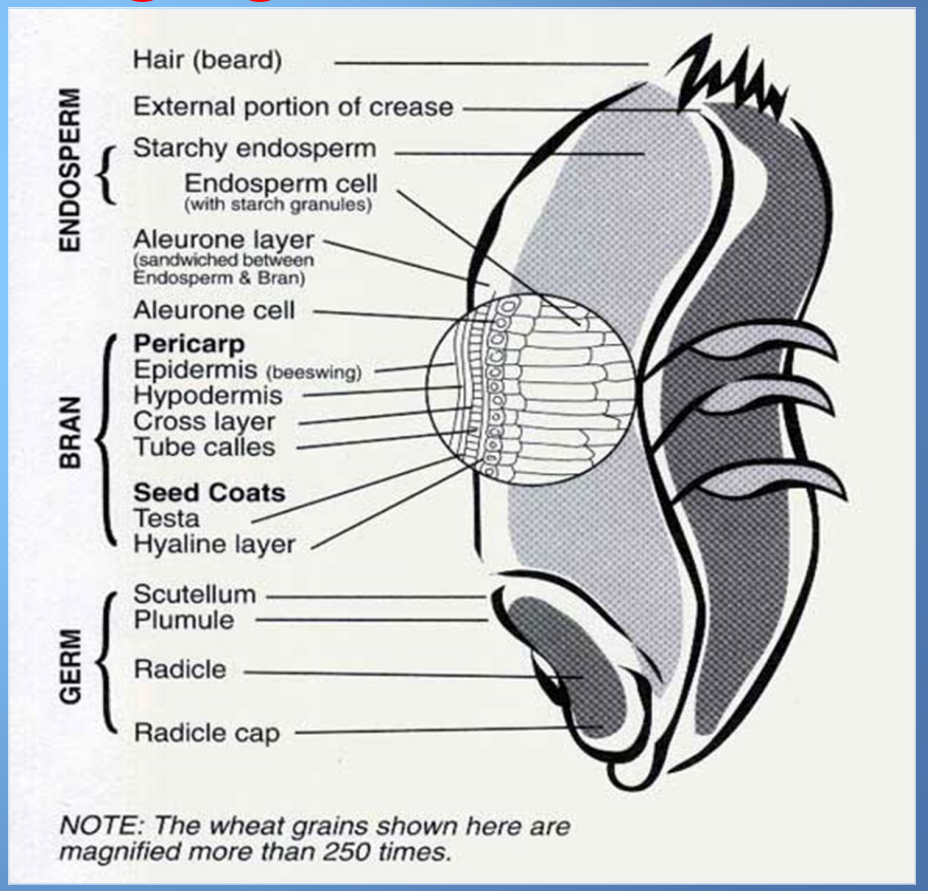
2-2-9 flowers

6-What from flower of wheat includes?

Perfect flower includes palae-lemma- 3 stamens-stigma-ovary and Self-pollination

7-Fill the shortages of the following Figure:





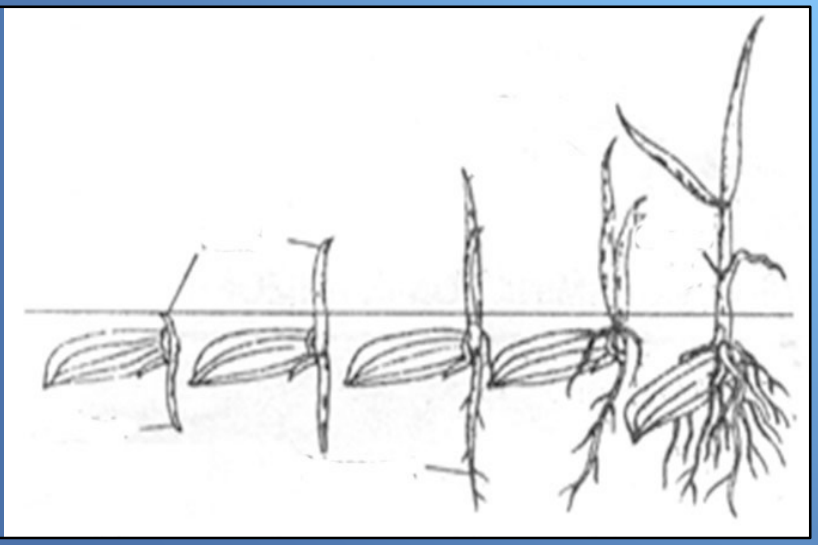
8-What type of wheat fruit? (one Mark)

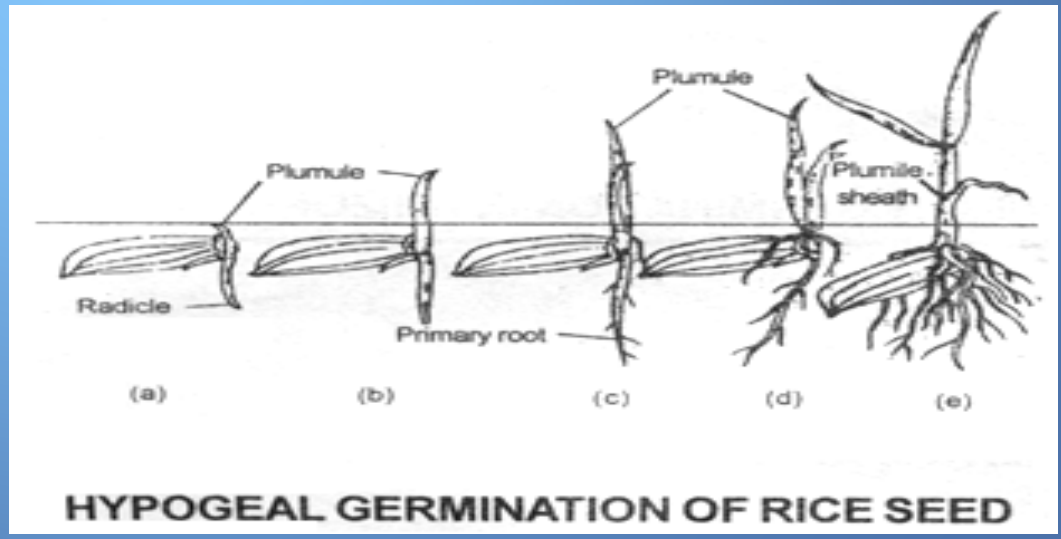
Wheat grain is kernel or caryopsis- dry indehiscent fruit.

9-What the types of rice roots? (2 marks)

The roots are fibrous, possessing rootlets and root hairs. One seminal root are sparsely branched. The secondary is adventitious roots.

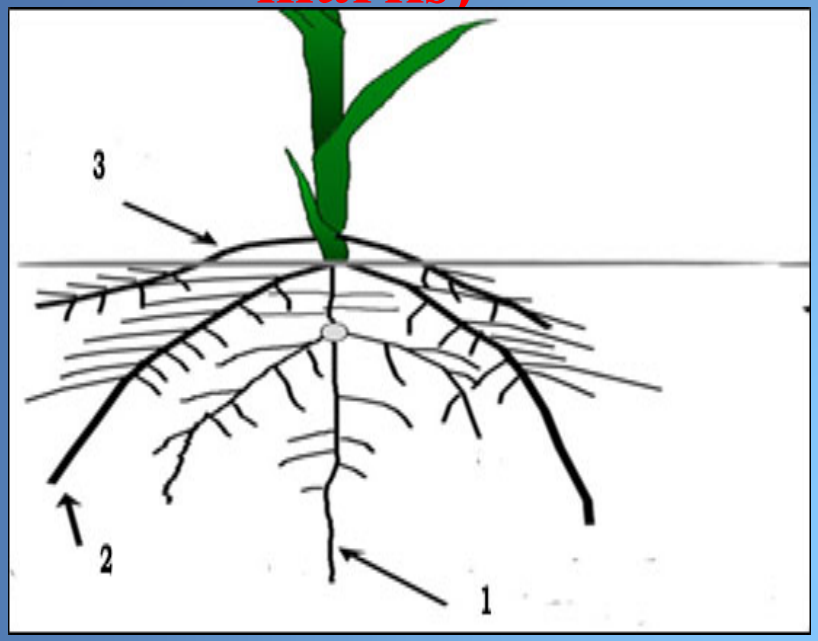
10- Fill the shortages of the following Figure: (3 marks)

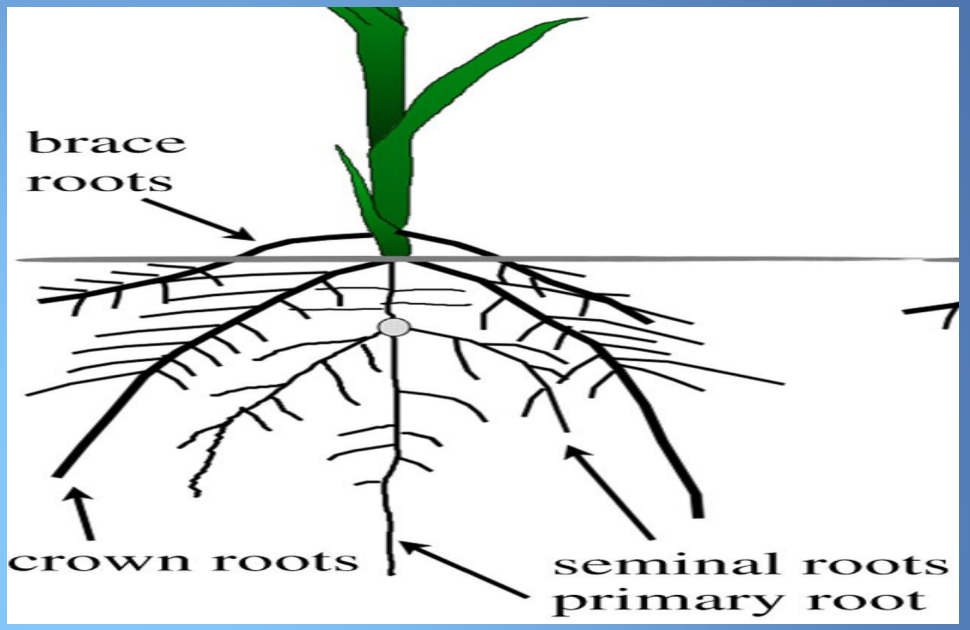




HYPOGEAL GERMINATION OF RICE SEED

11- Fill the shortages of the following Figure: (3 marks)





12-Define stem rice and write its parts? (3 marks)

Rice stem is erect, cylindrical, and hollow except at the nodes includes 6-12 internodes. Internodes increase in length from the lower to the upper portions of the plant. The lower internodes at the plant base are short and thick. The node is the solid portion of the culm.

13-For what leaf rice consisted of? (3 marks)

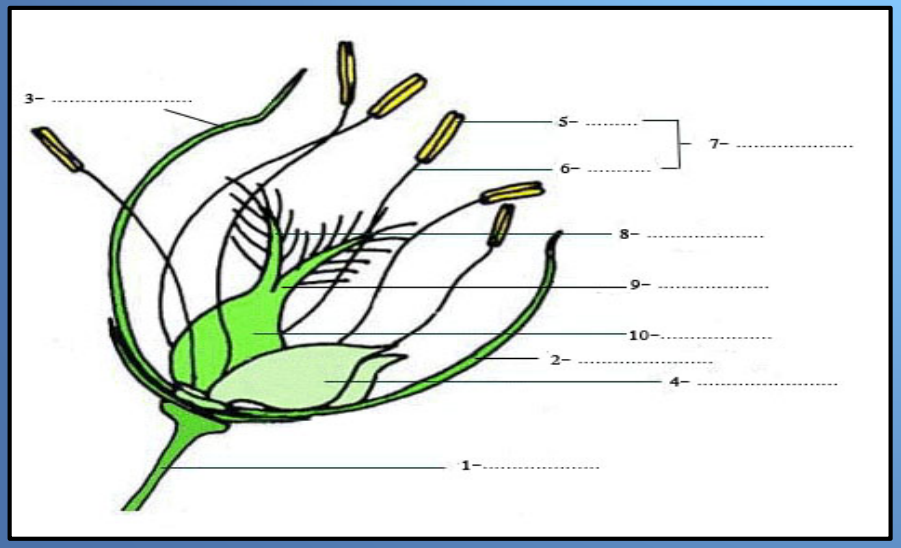
Each leaf comprises the sheath, the blade at the junction of the sheath there is the ligule, and the auricles.

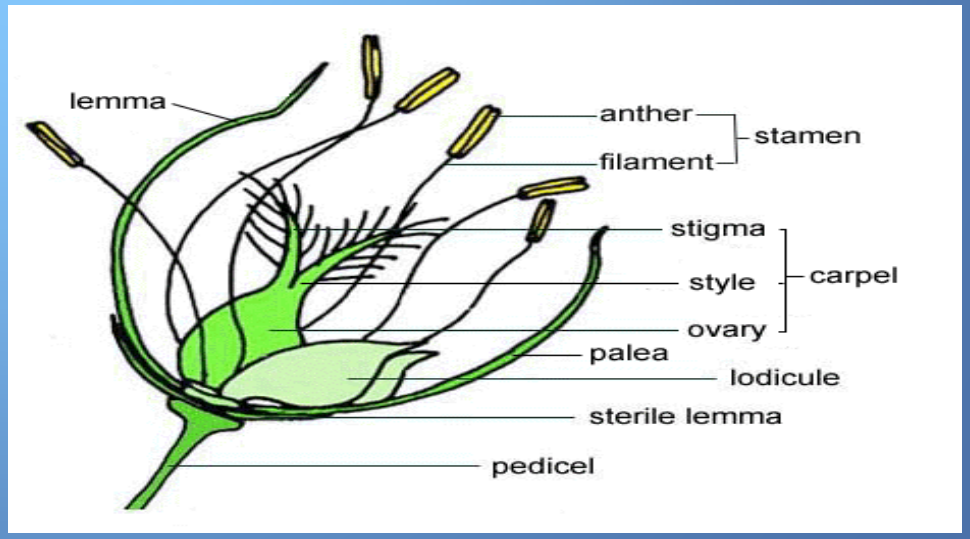
14-From what rice spike includes number of spikelets? and from what wheat spikelet includes number of flowers? (2 marks)

1-50-500 spikelets.

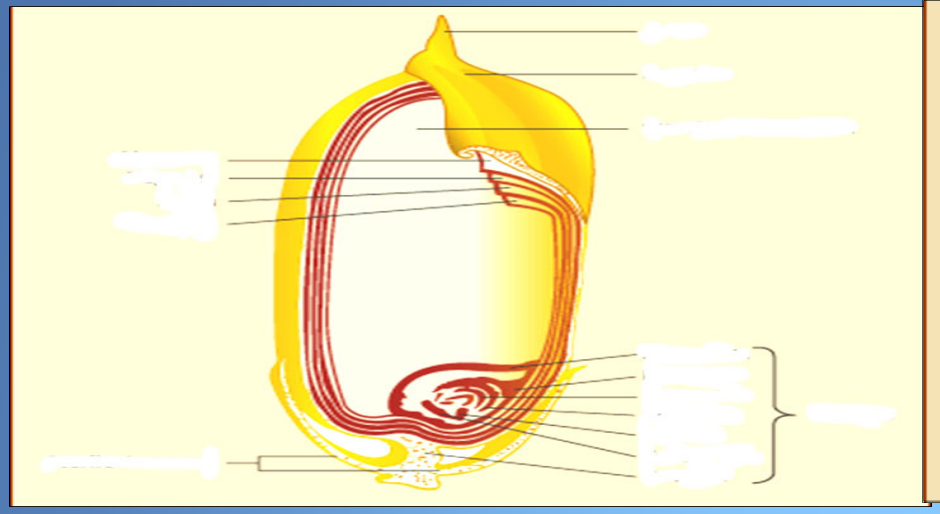
2-One flower.

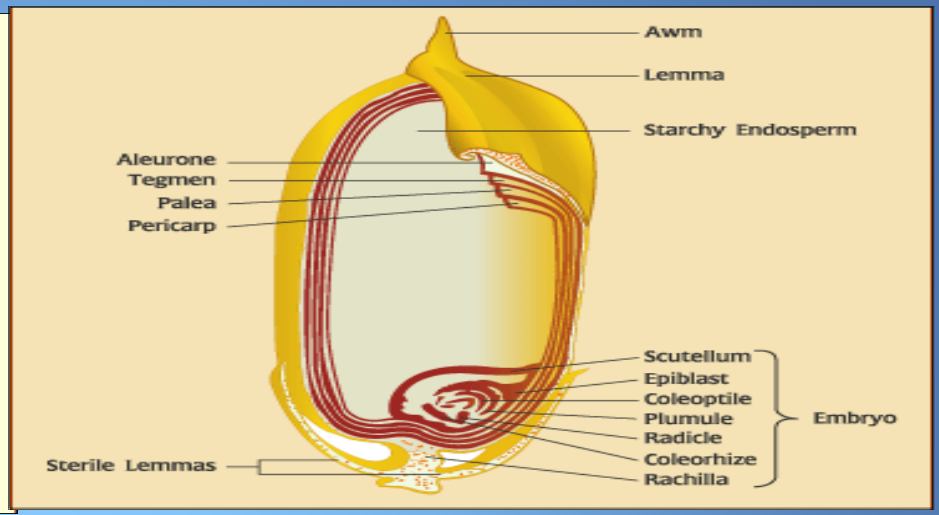
15- Fill the shortages of the following Figure: (6 marks)





16- Fill the shortages of the following Figure: (6 marks)





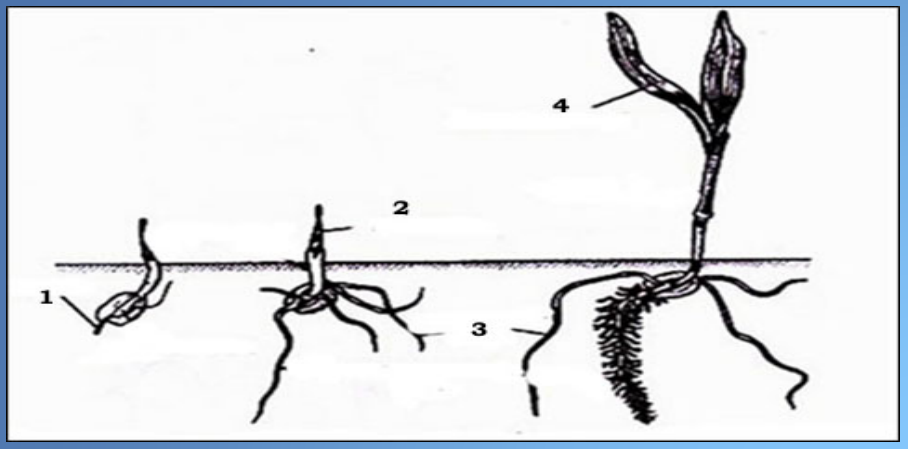
17-Complete the following Table (8 marks):

Characters	Wheat	Rice	Maize
Germination			
Root			
Stem			
Leaf			
Influences			
Flowers			
Pollination			
Fruits			

ers	Wheat	Rice	Maize
Germination	Hypogeal	Hypogeal	Hypogeal
Root	Fibrous: 4-5 seminal roots- Adventitious roots (node)	Fibrous: One branched seminal root- Adventitious roots (node)-brace root (from the base node)	Fibrous: 1- seminal roots (4-6 roots). 2-Adventitious roots 3-Brace root, from the base node, above the soil.
Stem	Erect, cylindrical, and hollow except at the nodes 4-7 internodes the short in the base-the long the uppermost- Tillers after the 3 leaf expanded –node - internode	Erect, cylindrical, and hollow except at the nodes,7-12 internodes (30-180 cm) - the short node in the base - the long the uppermost- 2-3 tillers	Erect, cylindrical, and hollow except at the nodes, 1-3 m tall-the short node in the base-the long one on uppermost- Tassel at the top-ear or cop at the middle
Leaf	Compound- 1-blade with midrib- 2-sheath cylindrical tubular on stem -3-ligule-4-aurticles. Flag leaf surrounded the spike	Compound- 1-Blade with midrib- 2-Sheath cylindrical tubular on stem -3-Ligule-4-Aurticles.Flag leaf erect.	Compound - 1-Broad blade with midrib. 2-Sheath cylindrical tubular on the stem. 3-Ligule. 4-Aurticles. Flag leaf surrounded the ear

ers	Wheat	Rice	Maize
Inferences	Spike- 20-25 spikelets-2-9 floret-Rachis-Rachilla	Panicle- Penducle-50-500 spikelet-one flower per spikelet-Rachis-Rachilla	Tassel (male organs) in the top of plant- cob or ear (in the middle) the female organs.
Flowers	Perfect- palea-lemma- stamens-stigma-ovary	Perfect-palea (3 ridges)-lemma (5 ridges)-stamens include 6 stamens-stigma-ovary -	1-Male flower-palea-lemma - stamens include 3 stamens- 2-Female flower- stigma (silks)-ovary
Pollination	Self-pollination	Self-pollination	Cross-pollination
Fruits	Grain-Kernel–Caryopsis- dry indehiscent fruit	Grain-Kernal – Caryopsis –hull encloses the brown rice.	Grain-Kernel–Caryopsis

18- Fill the shortages of the following Figure: (2 marks)



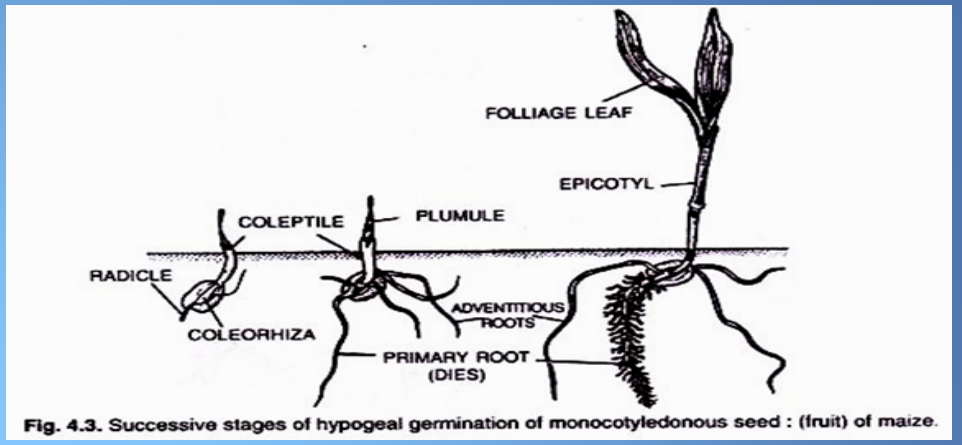
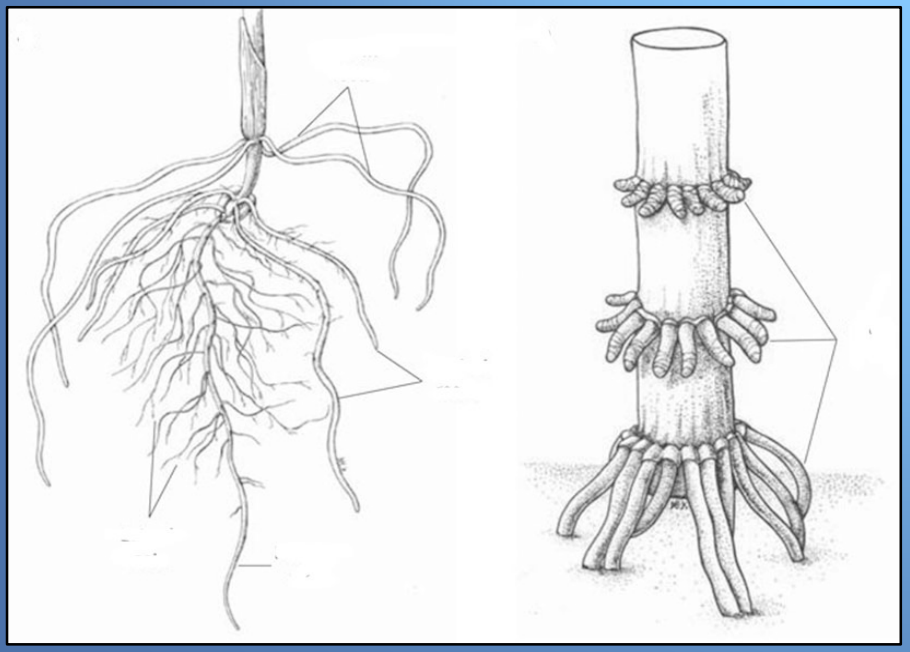
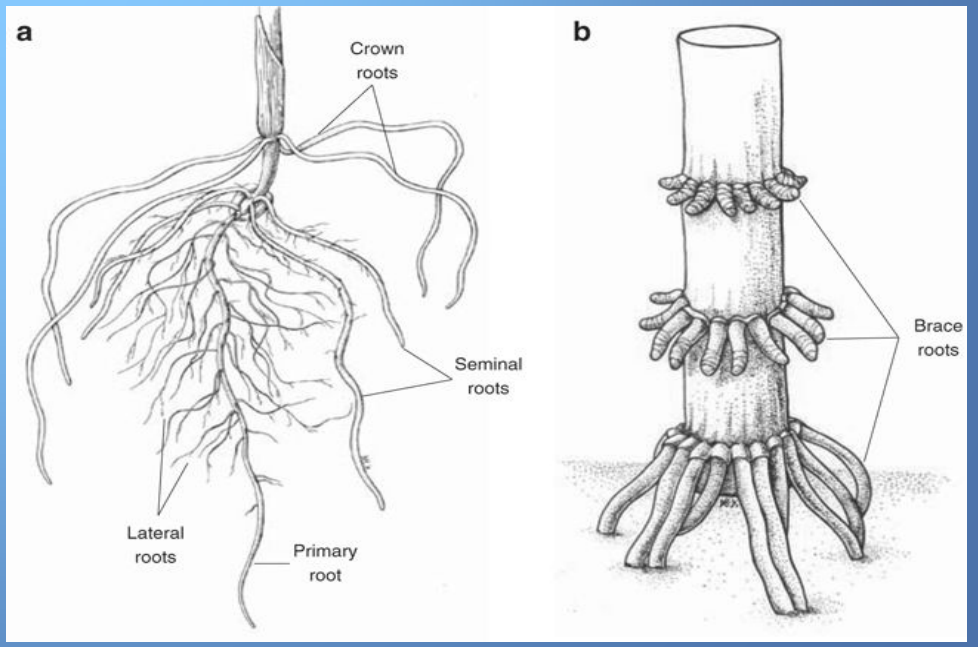


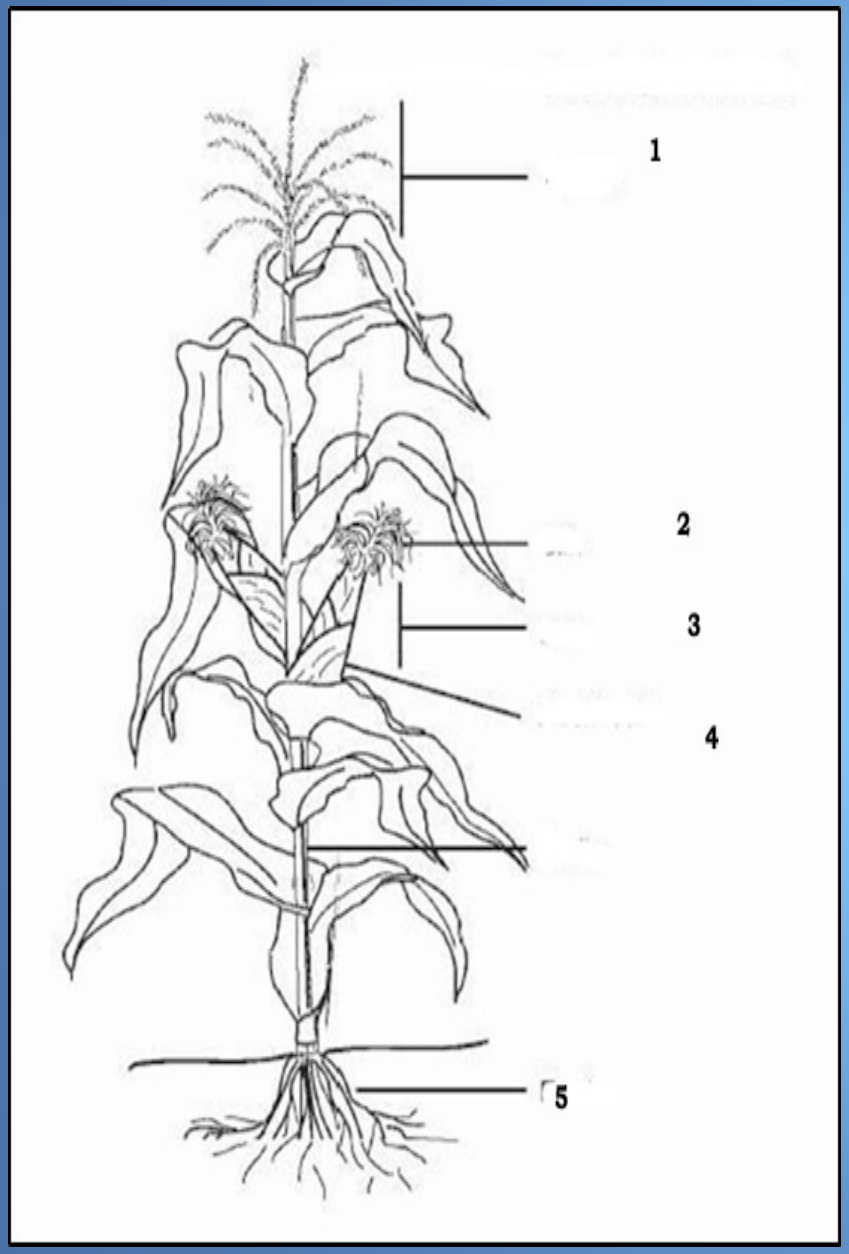
Fig. 4.3. Successive stages of hypogeal germination of monocotyledonous seed : (fruit) of maize.

19- Fill the shortages of the following Figure: (2.5 marks)





20- Fill the shortages of the following Figure: (2.5 marks)



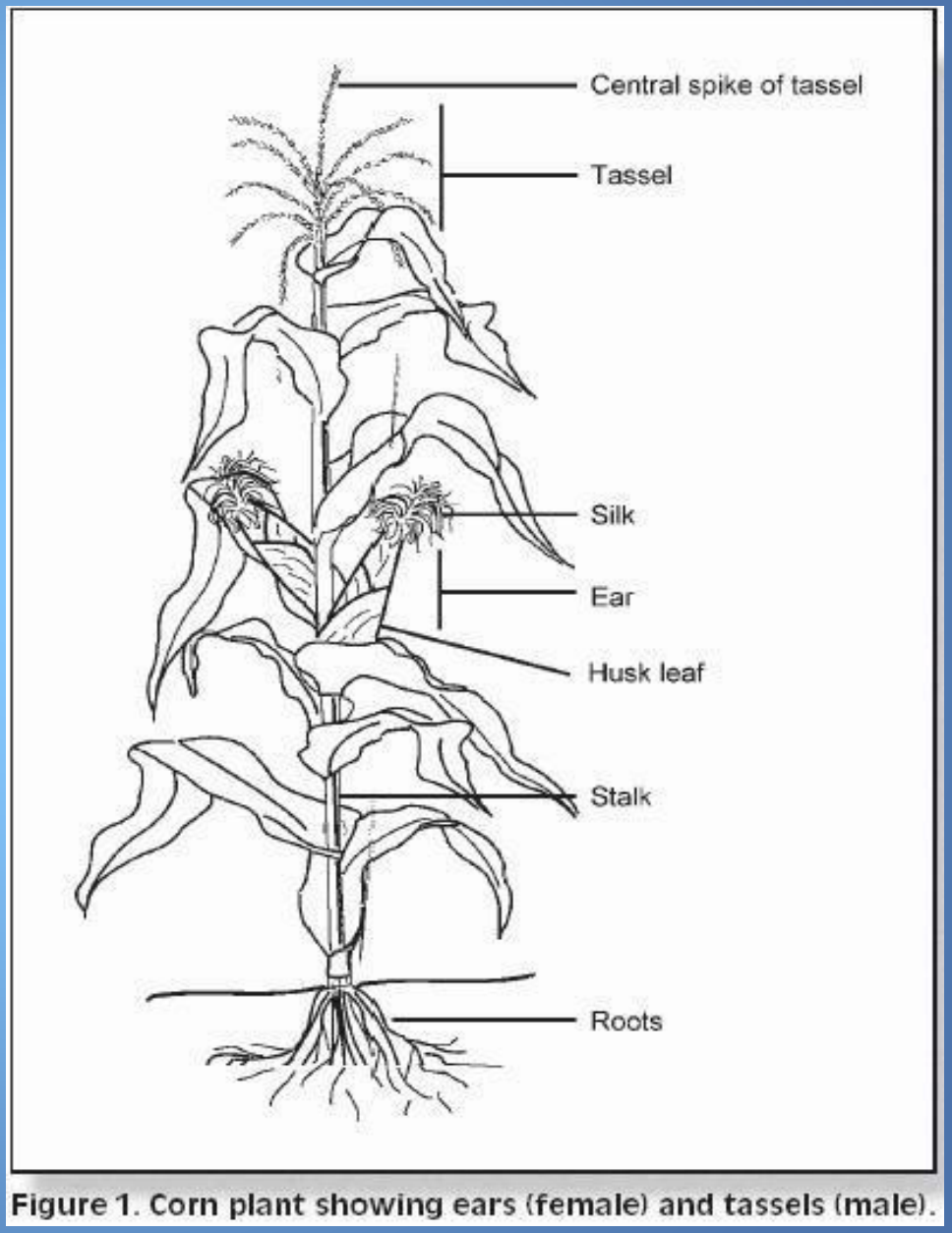
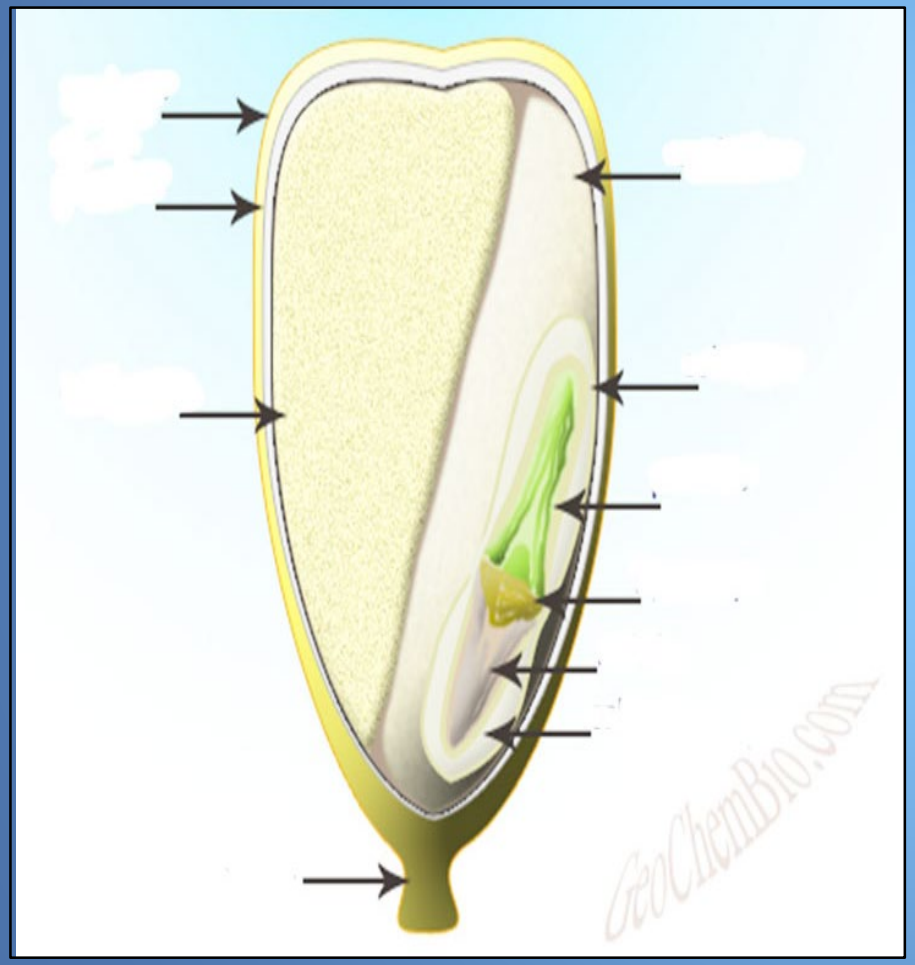
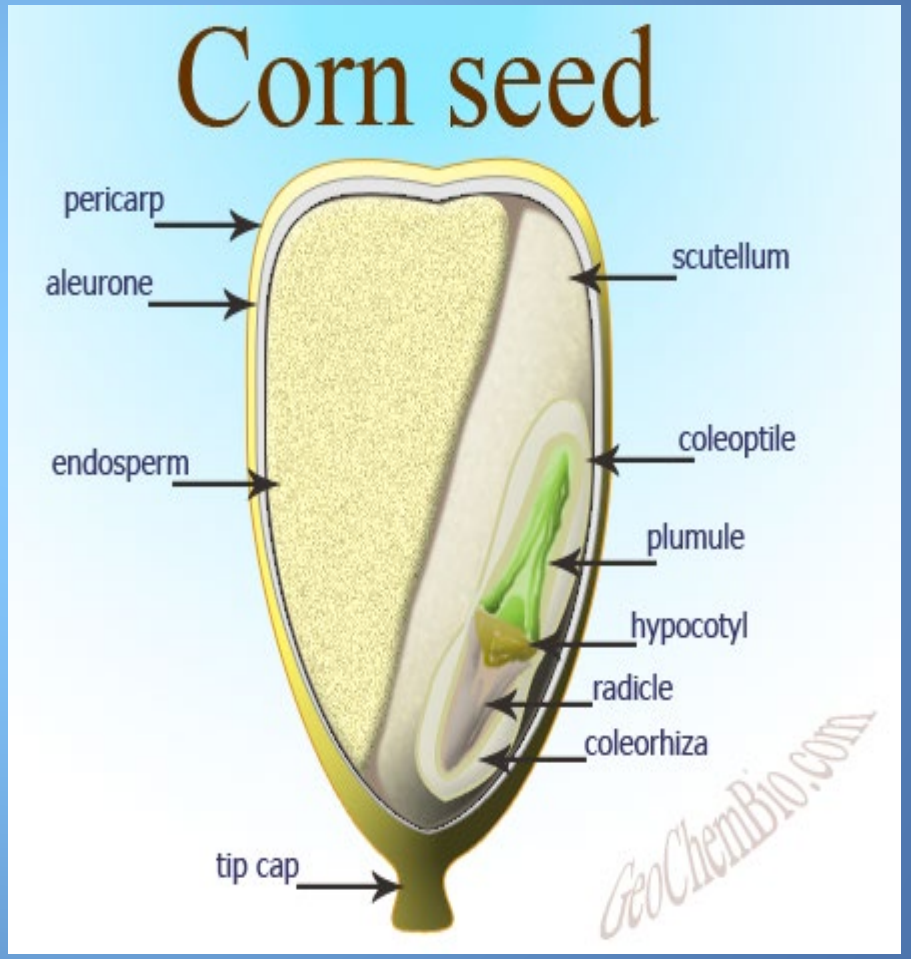


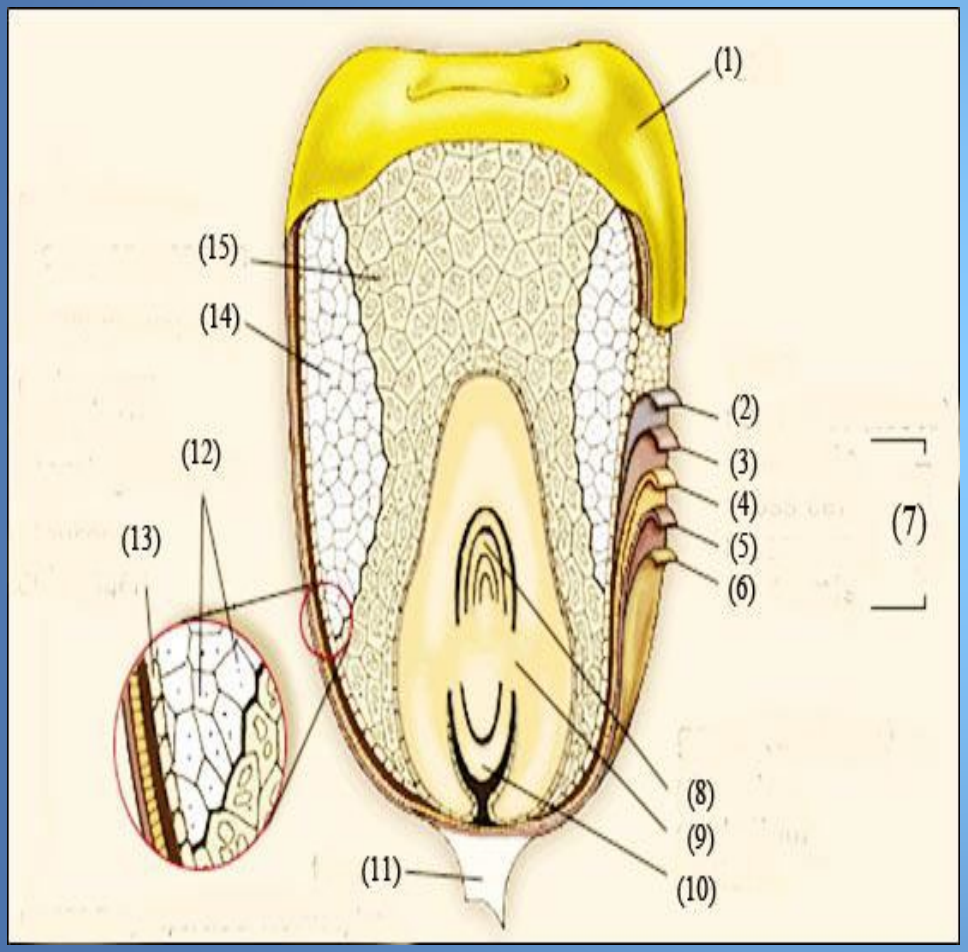
Figure 1. Corn plant showing ears (female) and tassels (male).

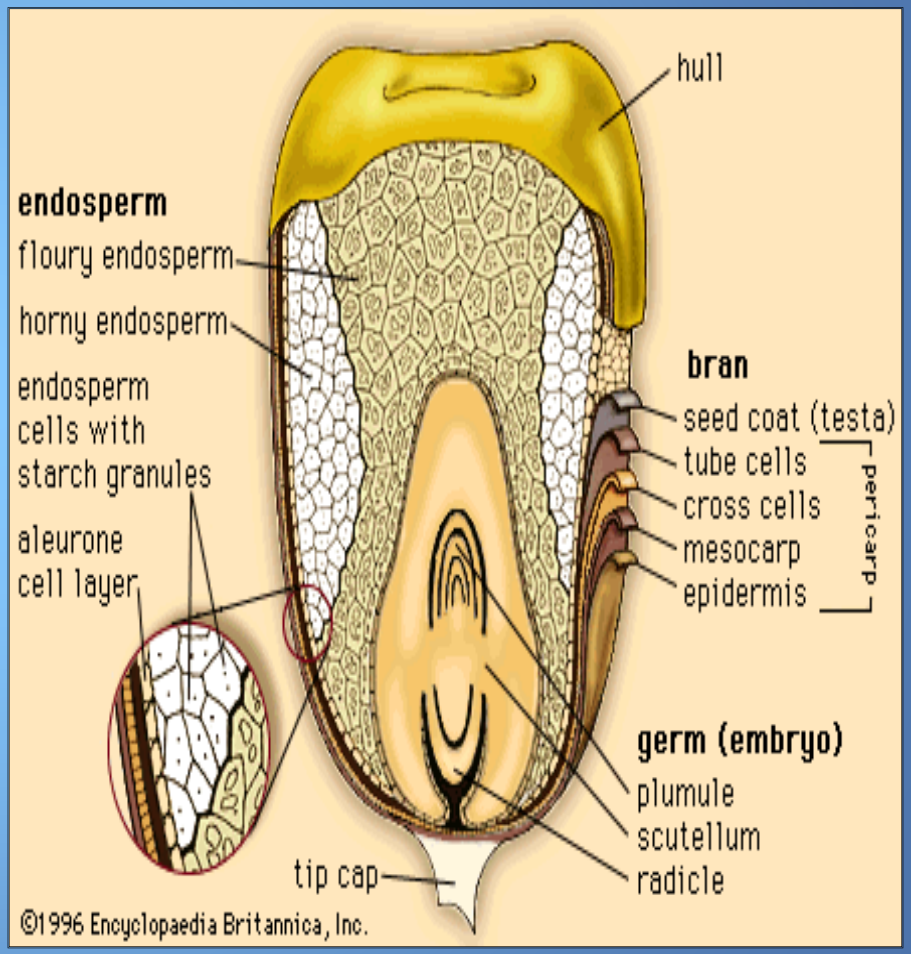
21- Fill the shortages of the following Figure: (5 marks)





22- Fill the shortages of the following Figure: (6.5 marks)





23-Write the types of corn roots? (3 marks)

1- The seminal roots (4-6) are formed during embryogenesis. 2-The adventitious (lateral roots), become thick and fleshy due to the storage of food at nodes below the soil. 3-The brace roots form above ground after plant emergence.

24-Write the terminology of the following sentences? (10 marks)

1-Its dent is caused by the shrinking of the soft, floury starch within the hard starch which is contained to one side of the kernel (……..) Dent Corn.

2-It has a smooth kernel due to a limited to non-existent amount of soft starch contained within the hard endosperm. It ranges in color from white to deep red. (……) Flint Corn.

3-It resembles flint corn in size and shape but is mostly white or blue in color. Soft, mealy starch dominates the endosperm so the kernel can easily be crushed into flour.(……..) Flour Corn.

4-It is easily recognized by their wrinkled kernels, which are typically white or yellow. The sweetness is a result of a genetic defect in metabolism that prevents the sugars from being completely transformed into starch (……) Sweet Corn.

5-It has small, hard kernels that contain high levels of starch in the endosperm. They are extremely hard kernels of the flint variety. It is that when heated the water in the starch steam-pressure the endosperm to explode causing the small kernels to well and burst producing an edible white flakei. (……) Popcorn.

6-Its at the top of the plant and provides the pollen for fertilizing the ear. (……..…..). The Tassel

7-The pollination of a flower with pollen from another plant of the same species to the stigma of another plant. (……..) Cross-pollination

8-Seed germinate and elongation of the epicotyl brings the embryo out from between the cotyledons and through the soil, leaving the cotyledons below ground. (……..…….) Hypogeal germination

9- Seed germinate and elongation of the hypocotyl brings the cotyledons and the plumule above ground (……..……) Epogeal germination

25-Write the types of faba bean plants?

1- *Vicia faba* var. minor with small rounded seeds (1.0 cm long).

2- *Vicia faba* var. *equina* with medium sized seeds (1.5 cm long).

3- *Vicia faba* var. major with large broad flat seeds (2.5 cm long).

26- What the type of faba bean roots? (one mark)

The taproot well-developed, with strong lateral roots.

27-Define the faba bean stem? (2 marks)

Stem is a stiffly erect (60-180 cm tall), branched annual plant; additional branches emerge from the base of the main stem, the stems are square, with vertical ridges defining the sides of the square.

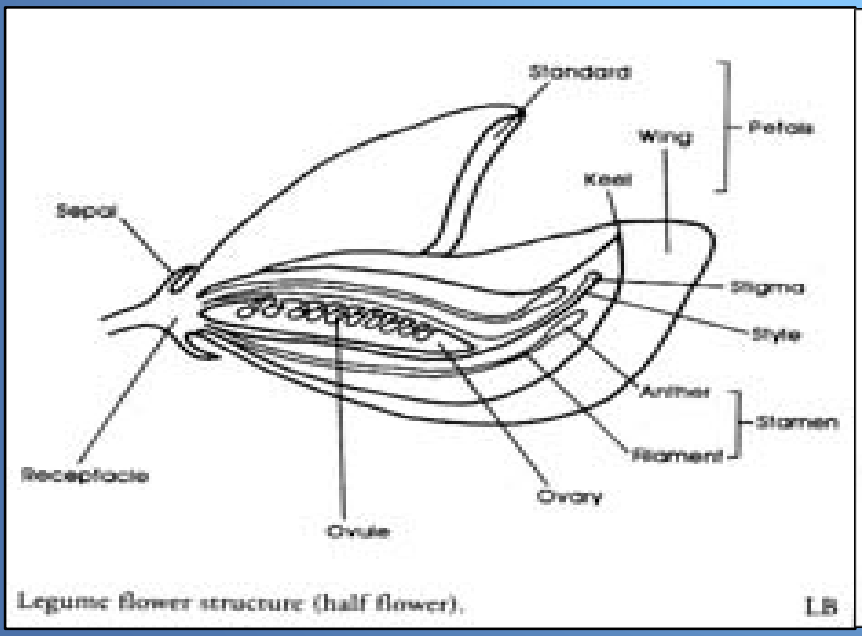
28- What the type of faba bean leaf? (2 marks)

The leaf is compound, paripinnate, with 2–6 leaflets, Leaves alternate. Seedling leaves emerge from the seed and the first true leaves are in pairs.

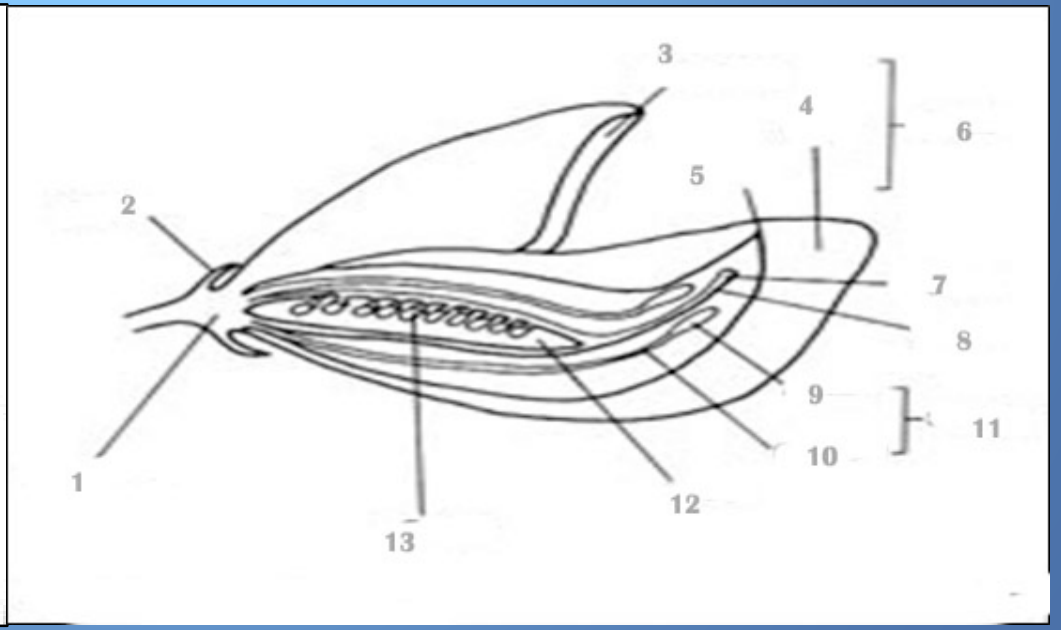
29-Write the legume flower structure? (5 marks)

Faba bean flower is papilionaceous sessile and large, white with dark purple markings, borne on short pedicels in clusters of 1-5, includes calyx, corolla white, broadly ovate, the keel, wings oblong-ovate, stamens 10, 9 united and 1 free.

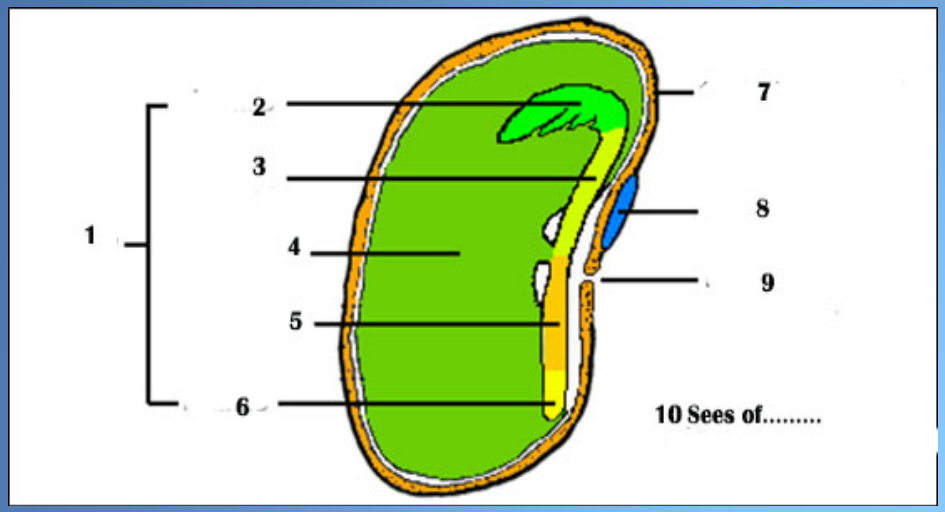
30-Write the shortage words on the following figure? (6 marks)

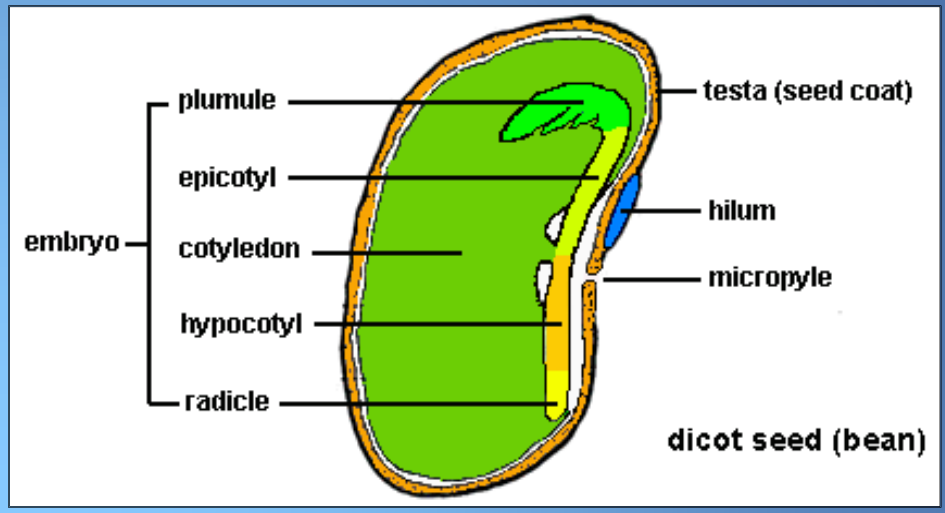


Legume flower structure (half flower). LB



31-Write the shortage words on the following figure? (4 marks)





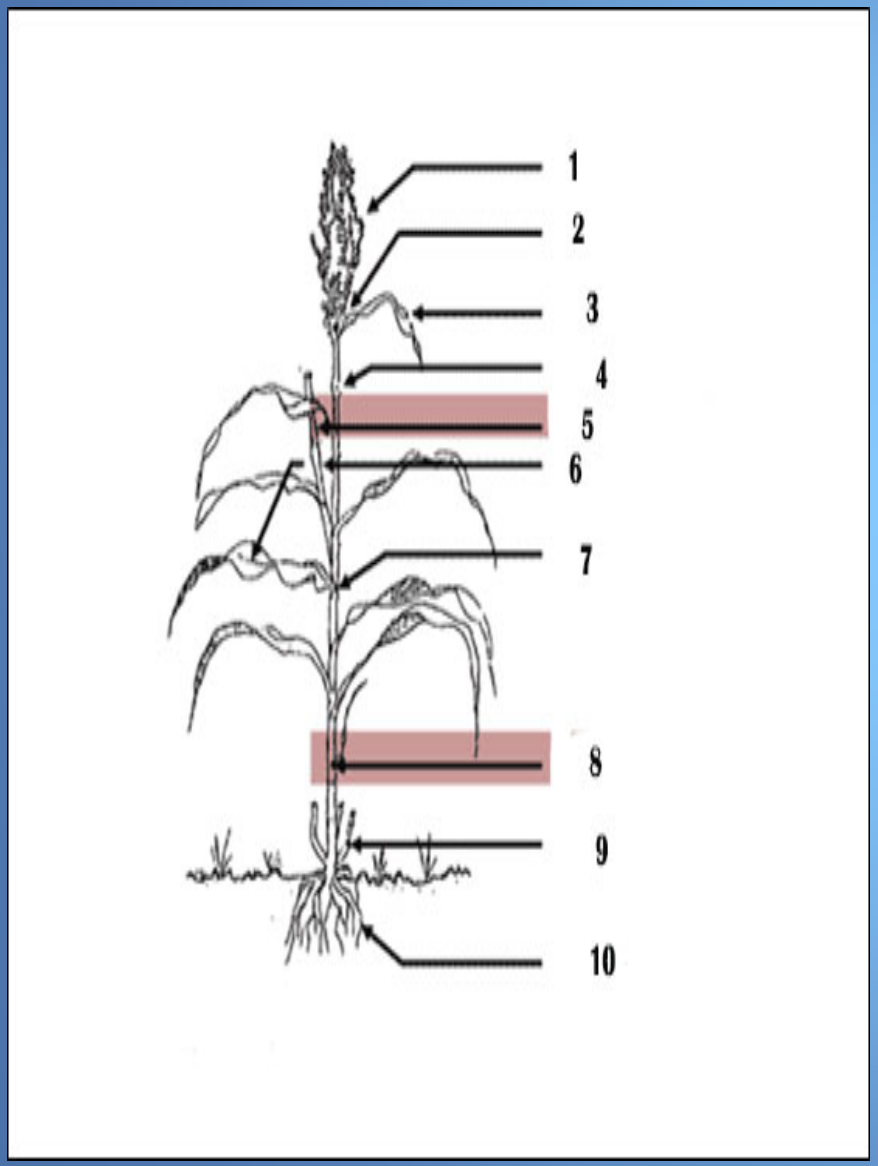
32-Why sorghum plants tolerant to drought than maize plants?

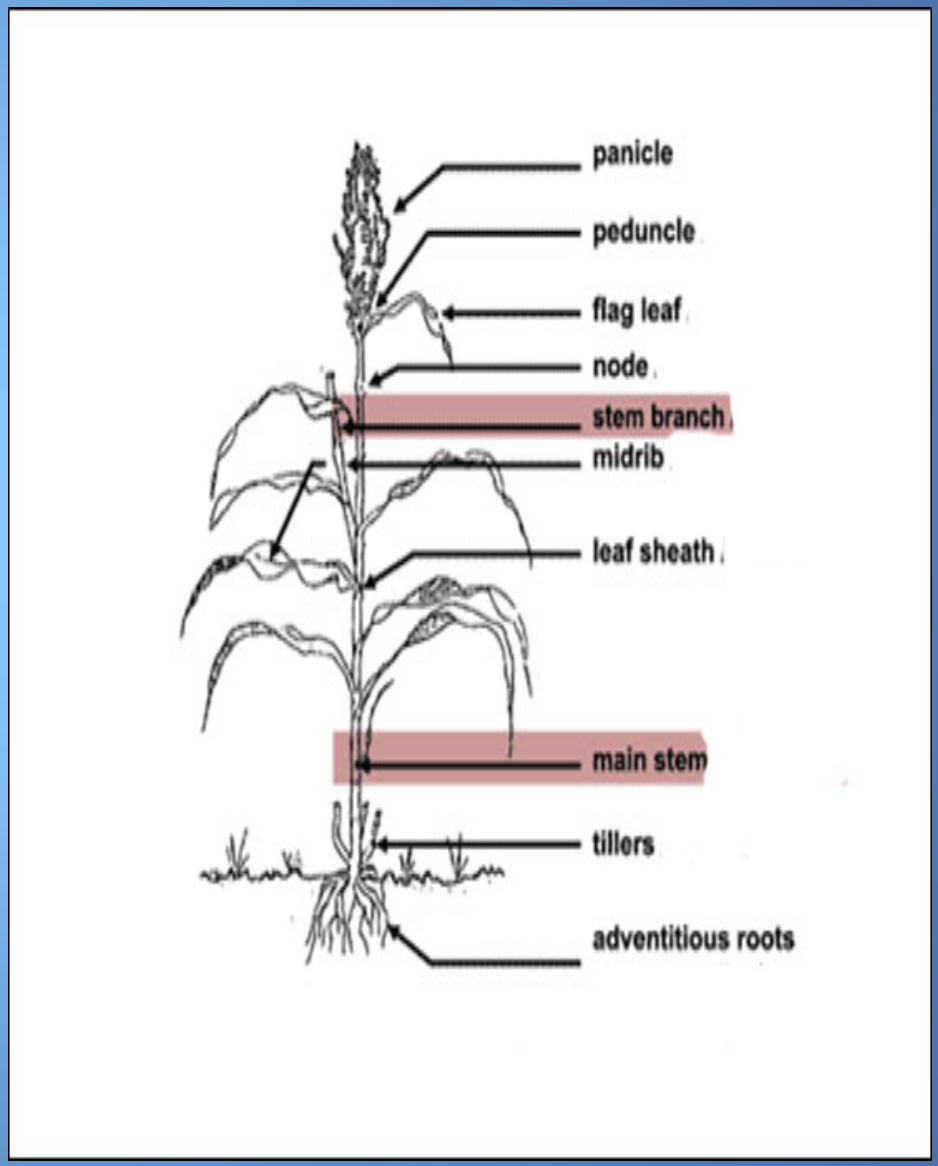
1-Sorghum plants have a leaf area smaller than that of maize and more root system.

2-A unique characteristic of sorghum leaves is the rows of motor cells along the midrib on the upper surface of the leaf. These cells can roll up leaves rapidly during moisture stress.

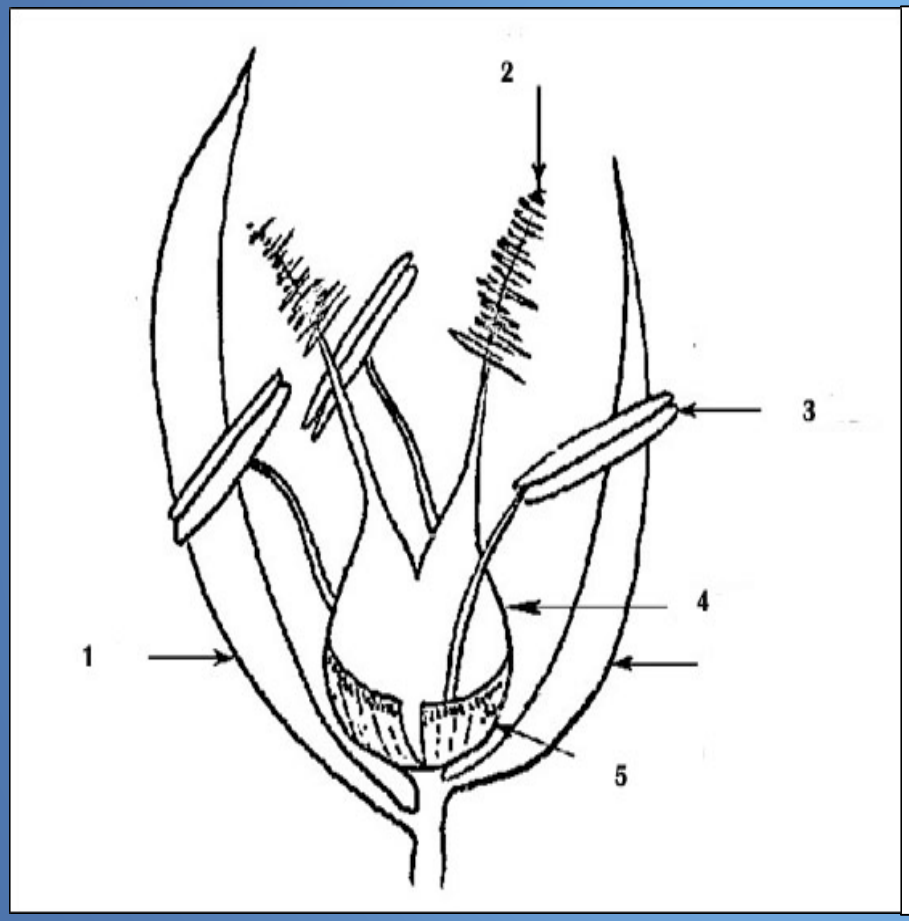
3-A thin wax layer covers leaves. 4-The internodes are covered by a thick waxy layer reduces transpiration and increases the drought tolerance of the plants.

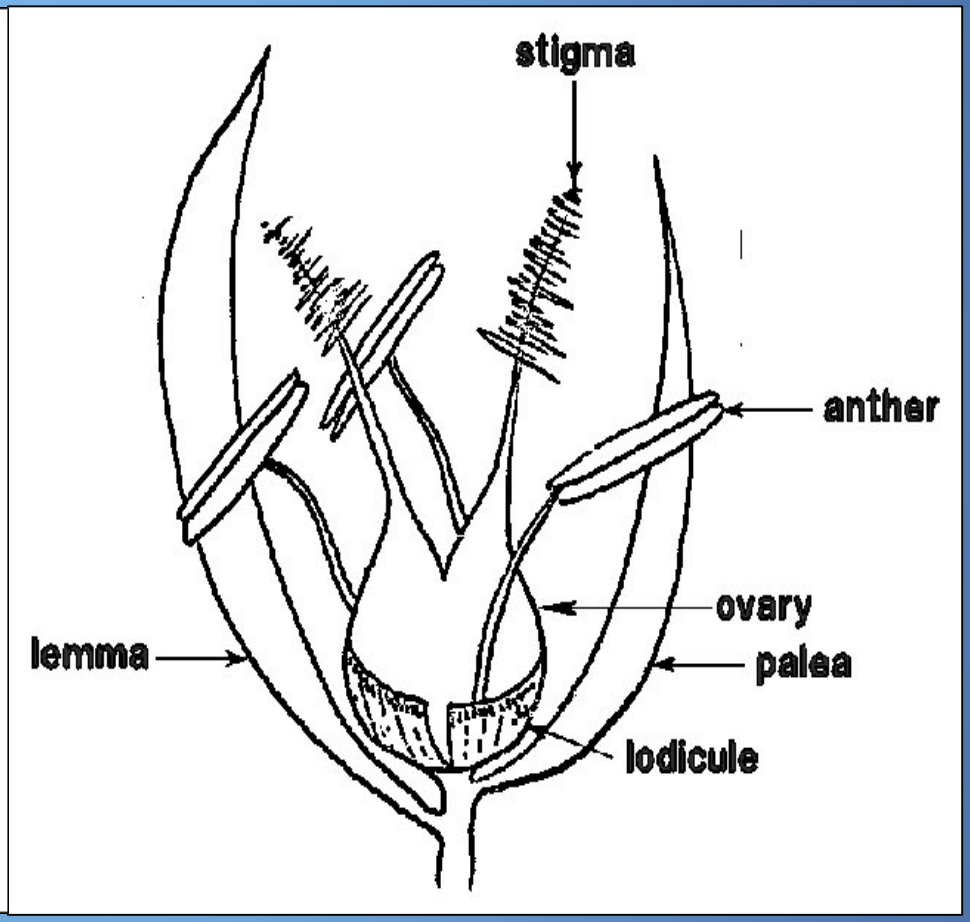
33-Write the shortage of the following figure (2.5 marks)



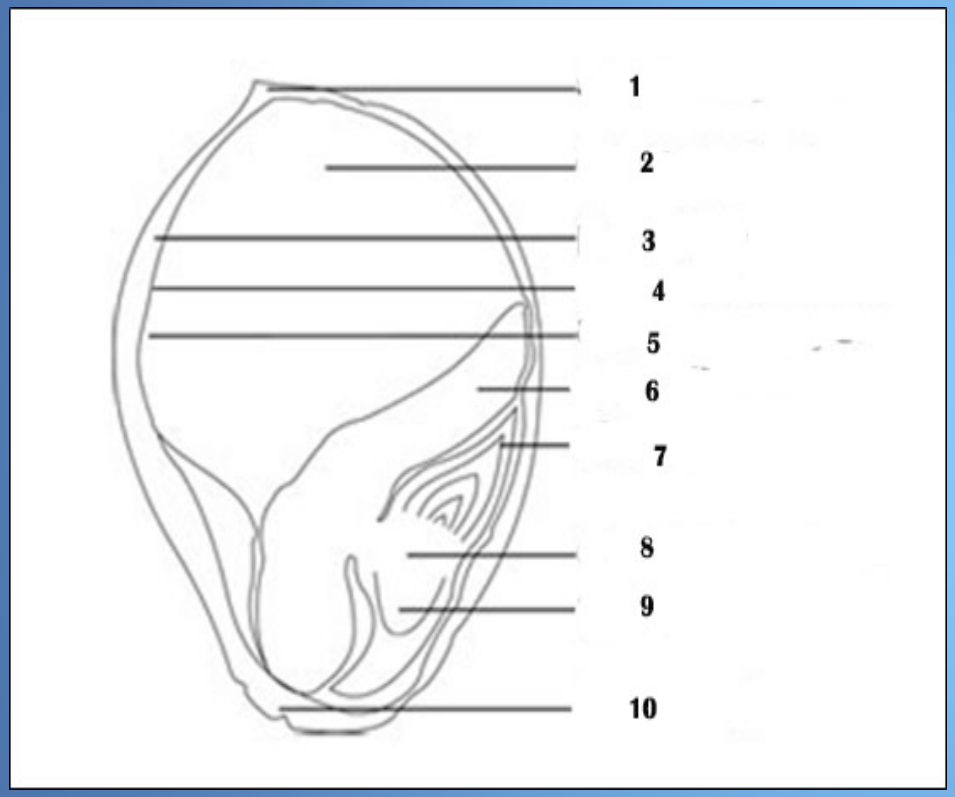


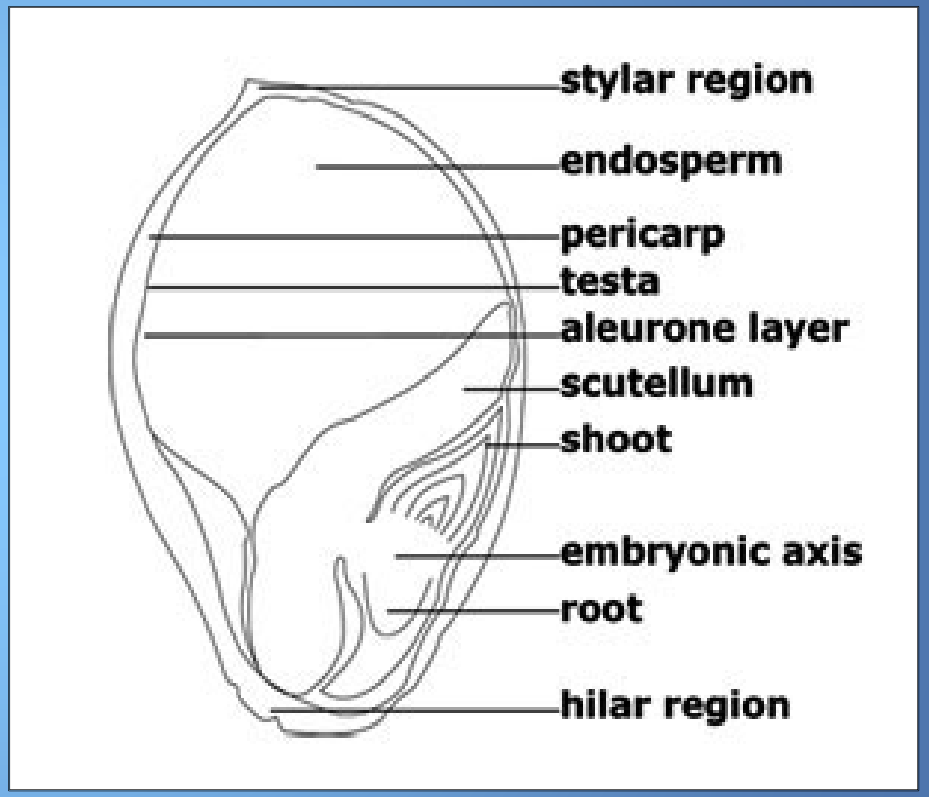
34-Write the shortage of the following figure (2.5 marks)





35-Write the shortage of the following figure (5 marks)





36-Write the types of chickpea according to the habit and seed size? (5 marks)

1. According to habit:

a-Push type (erect). b- Semi erect. c- Spreading (Prostrate).

2. According to seed size: a-Macrosperma (kabuli type) 100-seed mass >25 g

b-Microsperma (desi type).

37-What the type of chickpea root and bacterial node strains? (2 marks)

The root is taproot 80-100 cm in the soil, branched 3 or 4 rows of lateral roots included bacterial noodles. *Rhizobium phasolii* L.

38-Define the stem of chickpea plant? (2 marks)

Stem of chickpea plant is erect with primary, secondary, tertiary branching, resembling a small bush and hairs.

39-What is type of chickpea leaf? (2 marks)

Leaves are petiole, compound, and unit par pinnate. The leaflets are opposite or alternate with a terminal leaflet (9-15) serrated,

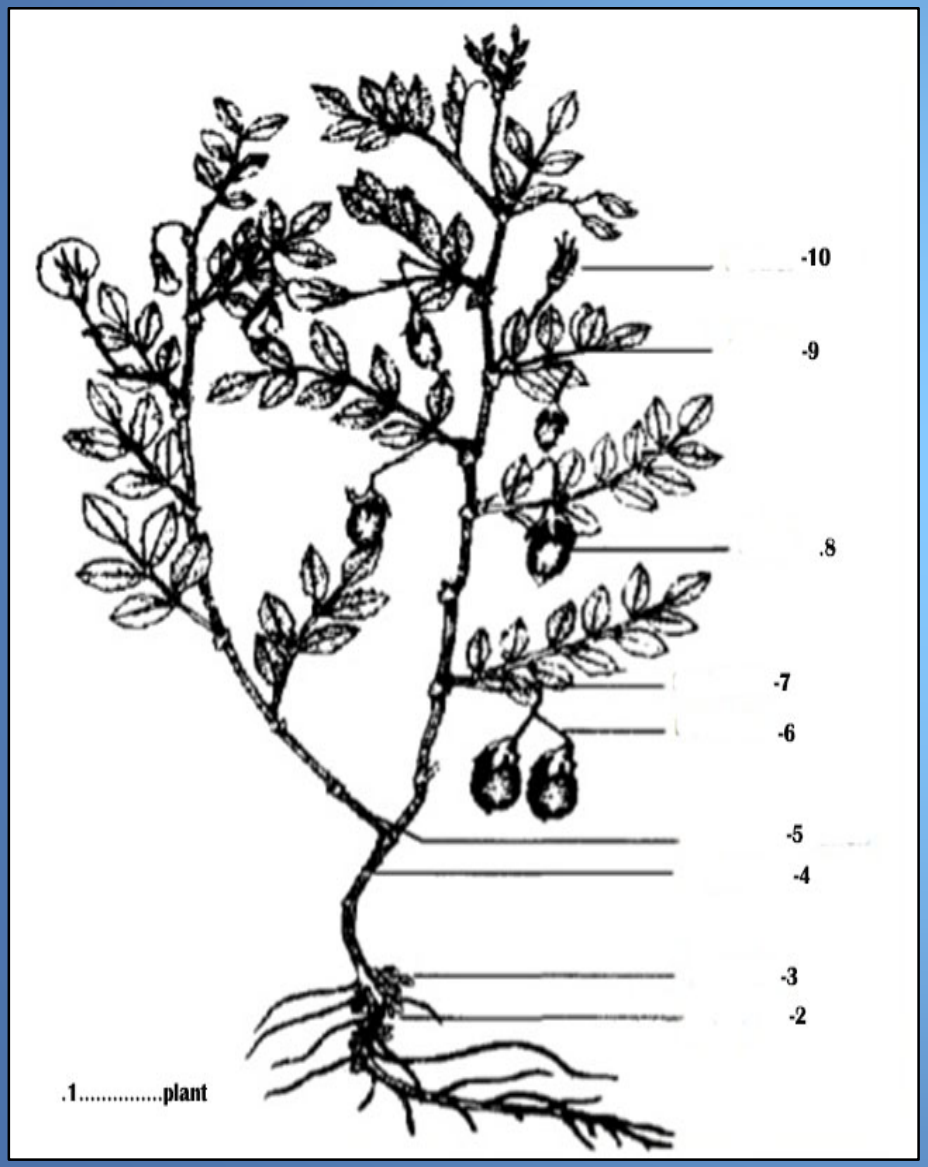
40-What is type of chickpea inflorescence? (2 marks)

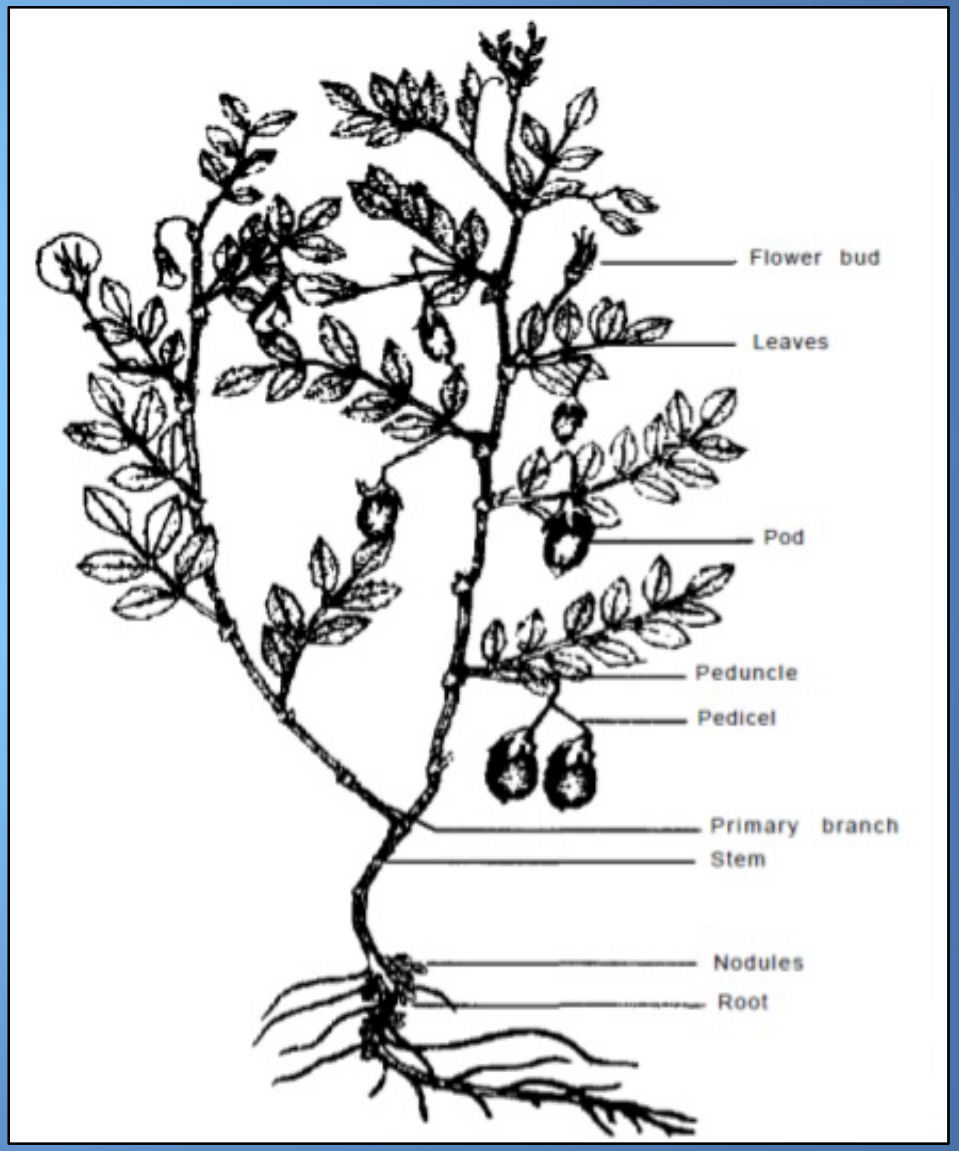
The solitary flowers are borne in an axillary raceme. Sometimes there are 2 or 3 flowers on the same node.

41-Define the fruit and seed of chickpea? (2 marks)

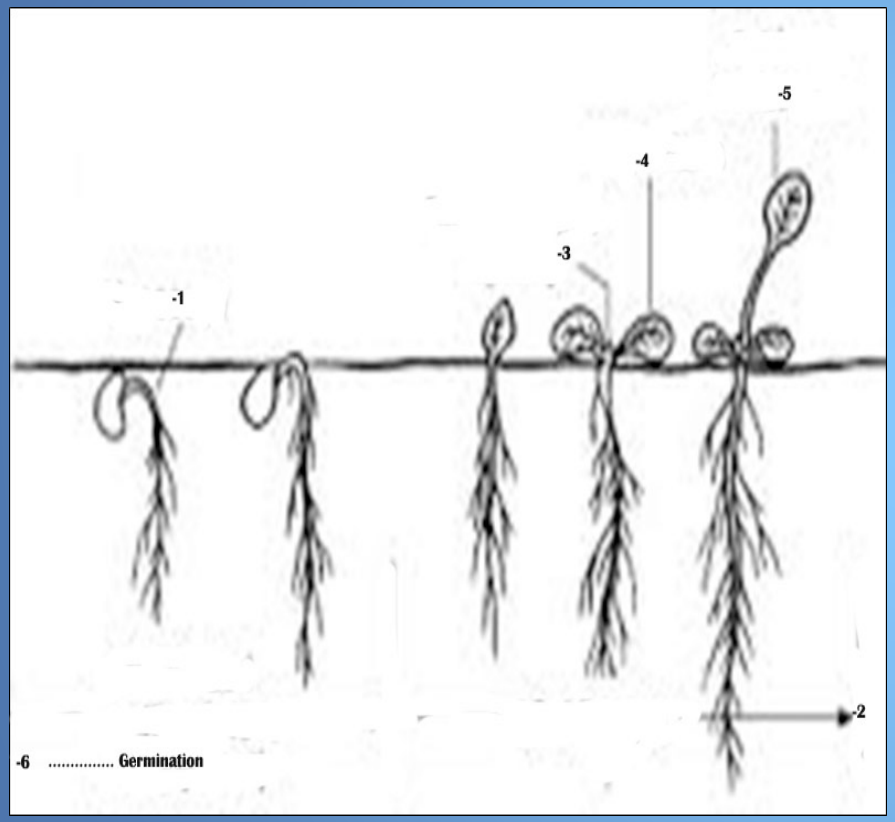
The pods are short, inflated and oval and typically contain one or two seeds. The seed have a seed coat, two cotyledons and an embryo, and angular in shape.

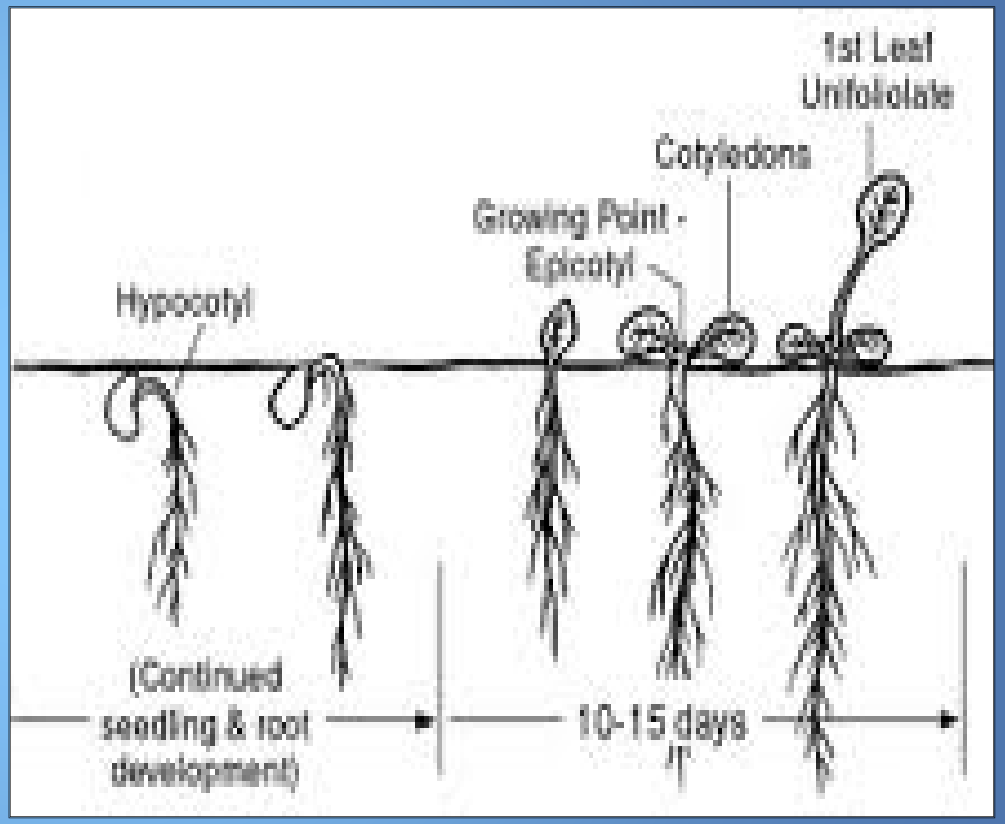
42-Complete the shortage of the following figure (5 marks)



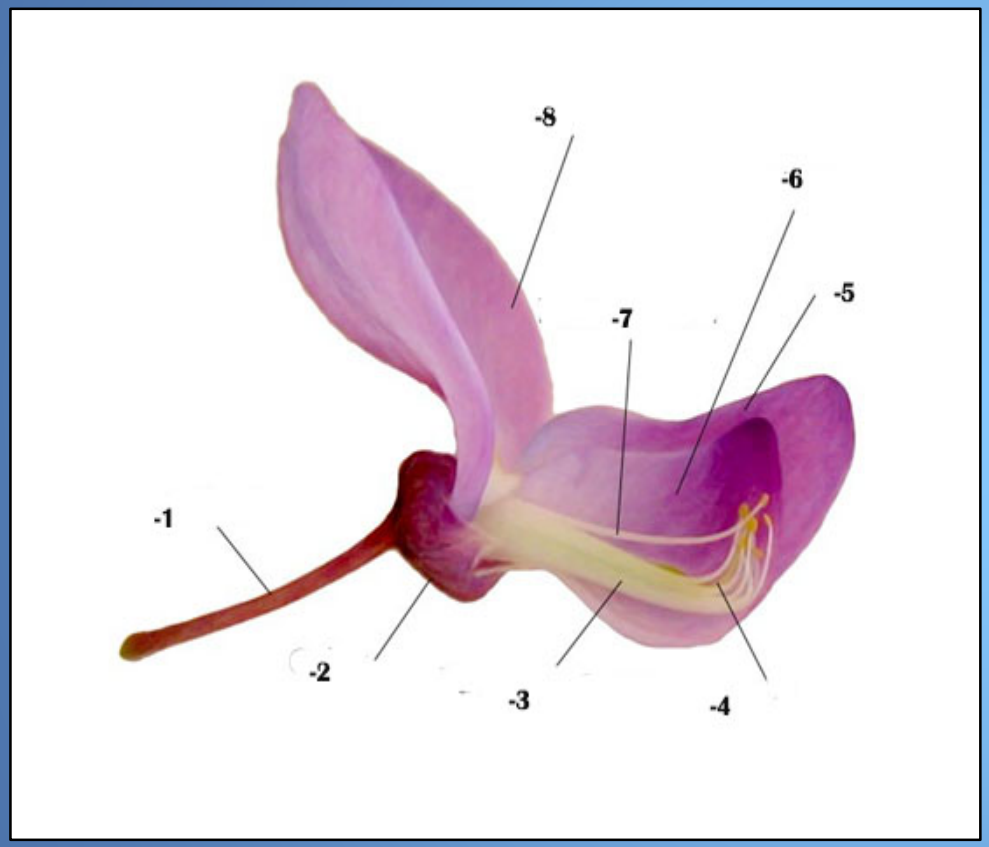


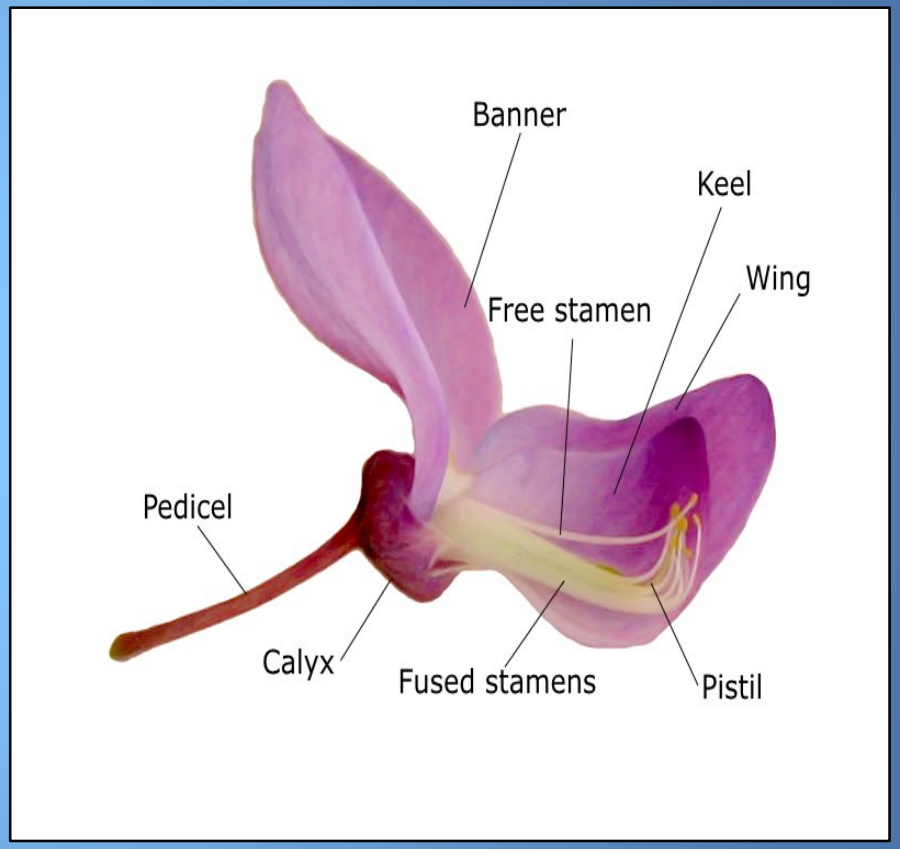
43-Complete the shortage of the following figure (2.5 marks)





44-Complete the shortage of the following figure (4 marks)





44-What the type of alfalfa root and bacterial nodes stain? (2 marks)

Root is taproot 150 cm in the soil, branched included bacterial noodles. *Rhizobium melotii* L.

45-Define the stem of alfalfa plant? (2 marks)

Stems is procumbent, ascending to erect, arising from a woody base, 30–120 cm long

46-Define the alfalfa leaf? (2 marks)

The true leaves are trifoliate, with 3 leaflets with lightly serrated edges. All leaflet are borne on short stalks, the stalk of the terminal leaflet is longer than the side leaflets. The leaflets are a pointed oval shape

47-What is type of alfalfa inflorescence? (2 marks)

Inflorescences in dense racemes with 10–35 flowers, on peduncles 1–5 cm long.

48-Define the fruit and seed of alfalfa? (2 marks)

Pod curled, or pods with multiple colis, indehiscent, not spined, containing 2–6 seeds. Seeds yellow to brown, kidney-shaped to ovoid

49-What the type of Berssem root and bacterial nodes? (2 marks)

Root is short taproot 30-60 cm tall in the soil, branched included bacterial noodles. *Rhizobium trifolii,* L.

50-Define the stem of Berssem plant? (2 marks)

Berseem clover stem is an erect, hollow, hairy, highly branching , which can grow 60–80 cm tall. It has hollow stems, slender, and branched.

51-What is type of Berssem leaf? (2 marks)

The true leaves are trifoliate with 3 leaflets, All leaflet are borne on short stalks seated. The leaflets are a pointed oval shape, adnate parts of stipules oblong.

52-What is type of Berssem inflorescence? (2 marks)

Flowers form dense, elliptical clustered heads about 2 cm in diameter.

53-Write the fruit and seed of Berssem? (2 marks)

The fruit is a pod containing one single white to purplish-red seed, pexdium seed.

54- Select the correct answer from the following questions? (5 marks)

1- At fourth growth stage of wheat…….

a-Stem elongation begins at this stage. **b-Most tillers have formed by this stage**

c-the secondary root system is developing. **d-emergence of flower**

2-The wheat flower consists of a pistil (female organ) and …….. stamens (male organs).

a-three **b- six** **c- five** **d- tow**

3-The dehulled rice grain is called …….

a- caryopsis **b- compact** **c-huller** **d- no answer**

4-The lemma of the spikelets has ……..ridges.

a-three **b-five** **c-one** **d- tow**

5-The palea of the spikelets has …….. ridges.

a-three **b-five** **c-one** **d- tow**

55- Select the correct answer from the following questions? (5 marks)

6- The rice flower consists of a pistil (female organ) and …….. stamens (male organs).

a-three b- six c- five d- tow

7-The brace roots originated form …….. ground after plant emergence.

a- above b- under c- nearly d- a long stem

8-Faba bean roots need to be inoculated with the appropriate strains of *Rhizobium* …… to stimulates root nodule development.

a-phaseoli b-leguminsarium c-trifoli d- mliloti

9- Chickpea flowers are borne on the ……..

a) branches. b) raceme. c) rachis. d) axillary raceme by a pedicel.

10-The secondary roots of sorghum develop from nodes …… the soil surface.

a-above b- below c-along the main stem d- not grow

56-Complete the following Table? (8 marks):

Characters	Wheat	Rice	Lentil
Germination			
Root			
Stem			
Leaf			
Inflorescence			
Flowers			
Pollination			
Fruits			

ers	Wheat	Rice	Lentil
Germination	Hypogeal	Hypogeal	Hypogeal
Root	Fibrous: 4-5 seminal roots- Adventitious roots (node)	Fibrous: One branched seminal root- Adventitious roots (node)	A robust taproot with profusely branched secondary roots (30-60 cm),
Stem	Erect, cylindrical, and hollow except at the nodes 4-7 internodes	Erect, cylindrical, and hollow except at the nodes,7-12 internodes	Lentil plants are slender, semi-erect annuals.
Leaf	Compound- 1-blade with midrib- 2-sheath cylindrical tubular on stem -3-ligule-4-aurticles.	Compound- 1-Blade with midrib-2-Sheath cylindrical tubular on stem -3-Ligule-4-Aurticles.	compound leaves (4 to 7 pairs of leaflets) with a tendril at the tips

Characters	Wheat	Rice	Lentil
Inflorescence	Spike- 20-25 spikelets-2-9 floret-	Panicle- Penducle-50-500 spikelet-one flower per spikelet	Flowers they arise from the axils of the leaves
Flowers	Perfect- palea-lemma-stamens-stigma-ovary	Perfect-palea (3 ridges)-lemma (5 ridges)-stamens include 6 stamens-stigma-ovary -	The flowers, one to four in number, are small, white, pink, purple, pale purple or pale blue in colour.
Pollination	Self-pollination	Self-pollination	Self-pollination
Fruits	Grain-Kernel–Caryopsis- dry indehiscent fruit	Grain-Kernal –Caryopsis –hull encloses the brown rice.	The pods are about 15–20 mm long, broadly oblong, and slightly inflated and contain two seeds


Thank
You!