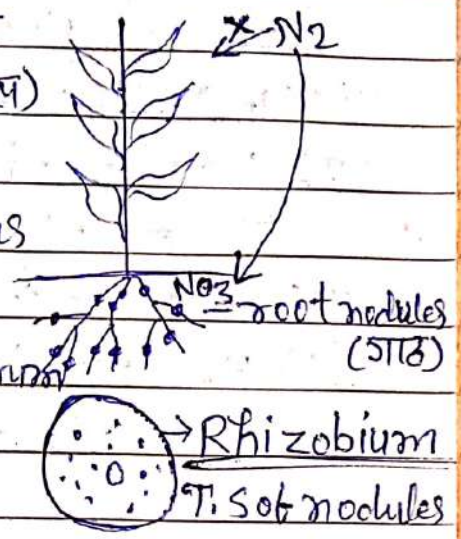


Clostridium

Above bacteria fix atmospheric N_2 in form NO_3^- and increases fertility of soil.

(b) Symbiotic N_2 fixing bacteria :->
(सहजीवी) Eg :-> Rhizobium

these bacteria found in the root nodules of Leguminous (दालचूरी) plant.



(i) In root nodules of Leguminous plant a red colour pigment Leg-haemoglobin or Leguminaoxin found which invite Rhizobium bacteria to grow.

These bacteria fix atmospheric N_2 in form NO_3^- and supply to the plant.

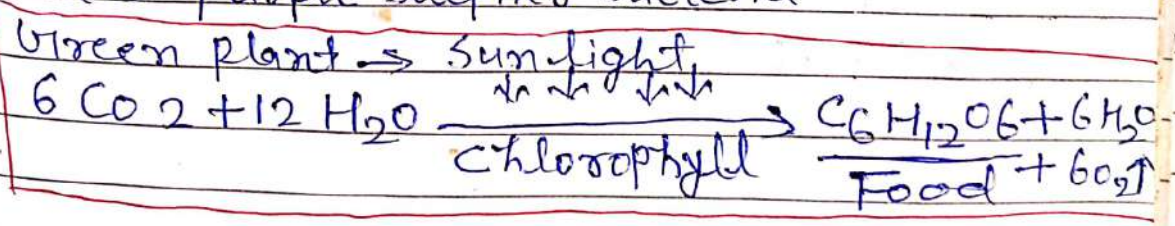
(2) photosynthetic bacteria :->

(i) utilize solar energy.

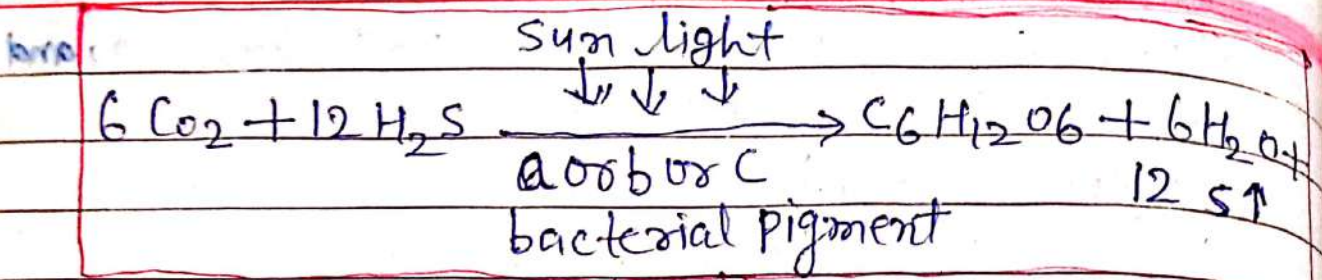
(2) In photosynthetic bacteria chlorophyll absent but instead of this other pigments are found.

- these are (a) Bacterial chlorophyll
 - (b) Bacterial viradine
 - (c) Bacterial porphyrine
- } Instead of chlorophyll

- Eg:- (i) Rhodospirillum rubrum
- (ii) green sulphur bacteria
- (iii) purple sulphur bacteria



In bacteria,



- Bacterial photosynthesis is unique, because
- (1) H_2S is used instead of H_2O
 - (2) Bacterial pigments are used instead of chlorophyll.
 - (3) sulphur is evolved instead of oxygen (O_2)
 - (4) photosystem II absent (H_2O not used) so, only photosystem I take part.

(1) Which one of the applicable for photosynthetic bacteria

- (a) H_2O is used (c) P.S I is used
 (b) O_2 evolved (d) H_2S is used.

(2) Which one of the non photosynthetic free living aerobic bacteria.

- (a) Azotobacter (b) Rhizobium
 (c) Clostridium (d) None

(3) Which one of the Nitrifying bacteria.

- (a) Nitrosomonas
 (b) Clostridium
 (c) Nitrobacter
 (d) None
 (e) M.T.O

~~Kamlesh
 10.04.2020~~

B.Sc Part-I (H) / 10.04.2020

Topic - Phloem cells

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③ Bast fibre or phloem fibre: →

(i) It is thick wall, elongated, dead, lignified sclerenchymatous cell found to associated with other cell of phloem.

(ii) Provide mechanical strength to the other cell of phloem.

Note → jute, flax, Hemp fibres are obtained from phloem fibre.

④ Phloem parenchyma: →

It is thin wall, living, isodimetric, some time elongated parenchymatous cell found to associated with the other cells of phloem.

In case of monocot (wheat) phloem, phloem parenchyma absent.

- function: →

Take part in storage of food material.

- function of phloem: →

Phloem as a whole take part in conduction of food material from leaf to different part of plant body.

Tissue Differentiation: →

In the apex of root and shoot there is a group of meristematic cell in which division take place to form permanent tissue.

In these permanent tissue differentiation take place to form different tissue.

For the differentiation of tissue following theories have been given.

① Apical cell-theory: →

given by Hofmeister (1857)
and supported by Negeli (1878)

According to this theory, single solitary ^{meristematic} cell present which is responsible for growth of root and shoot.

This theory is applicable in cryptogams (Bryophyta + Pteridophyta) because single meristematic cell present but in phanerogams (gymnosperm + angiosperm) because apical meristem having group of cells.

② Histogen theory: →

given by Hanstein (1870)

according to this theory there is group of meristematic cell at the apex of root and shoot which is differentiation into three parts.

(a) Dermatogen

(b) periblem

(c) plexome

In which of the following cells nucleus is not present at maturity.

(1) vessels

(2) Companion cells

(3) Parenchyma

(4) Collenchyma

Sieve tubes have

(1) apical and oblique plates

(2) perforated and longitudinal plates

(3) perforated and oblique septa

(4) simple oblique wall

Handwritten signature
10.04.2020