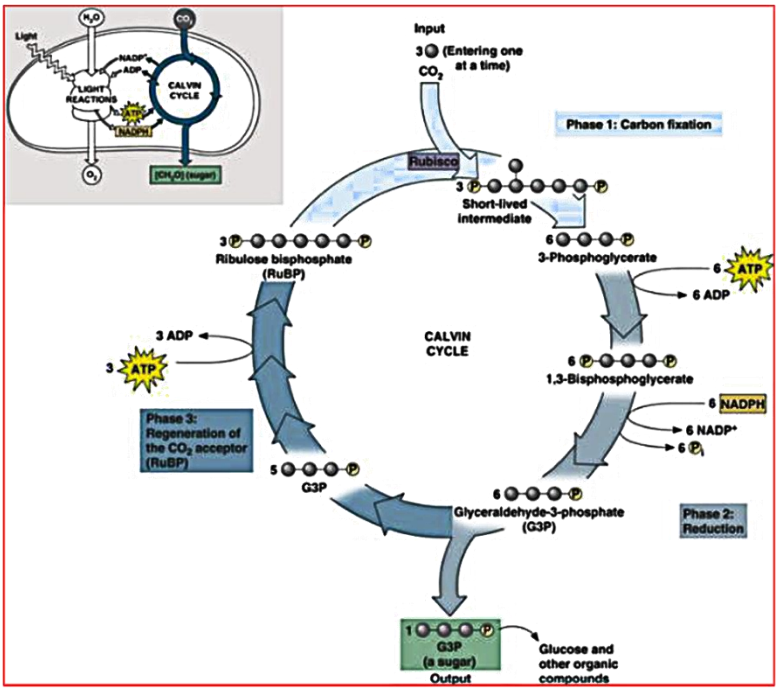
Photosynthesis _III

DARK REACTION OR BIOSYNTHETIC PHASE



Q. Fixation of one CO_2 molecule through Calvin cycle requires?

JIPMER 2017

A. 1 ATP and 2 $NADPH_2$

B. 2 ATP and 2 $NADPH_2$

C. 3 ATP and 2 $NADPH_2$

D. 2 ATP and 1 $NADPH_2$

Q. Phosponol pyruvate (PEP) is the primary CO_2 acceptor in

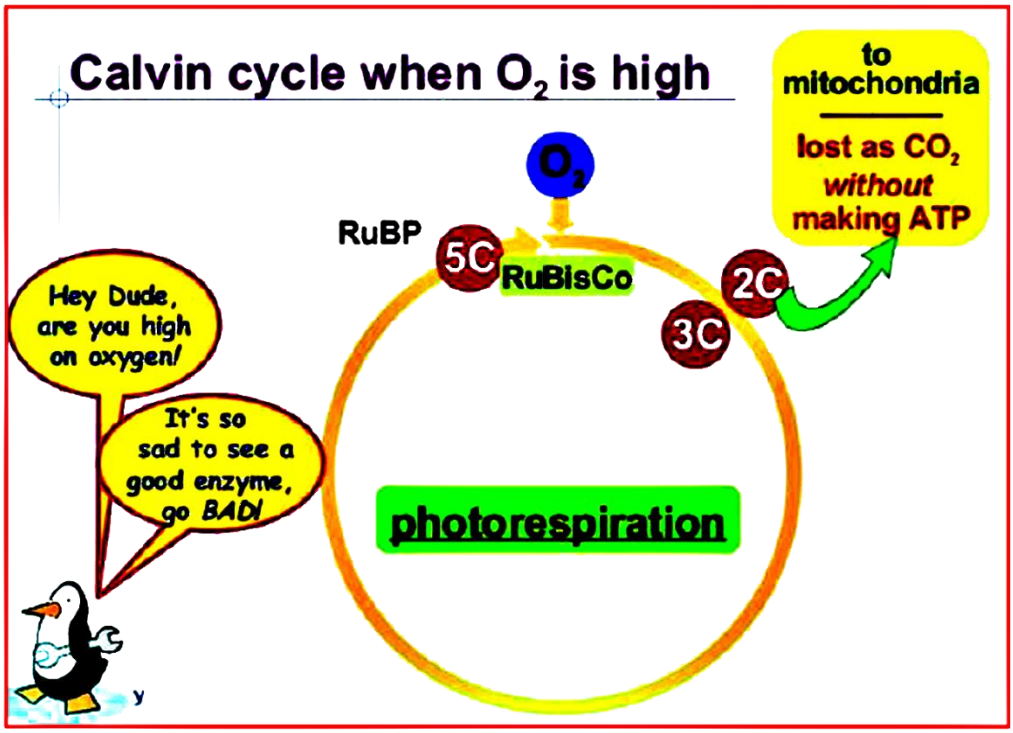
[NEET-2017]

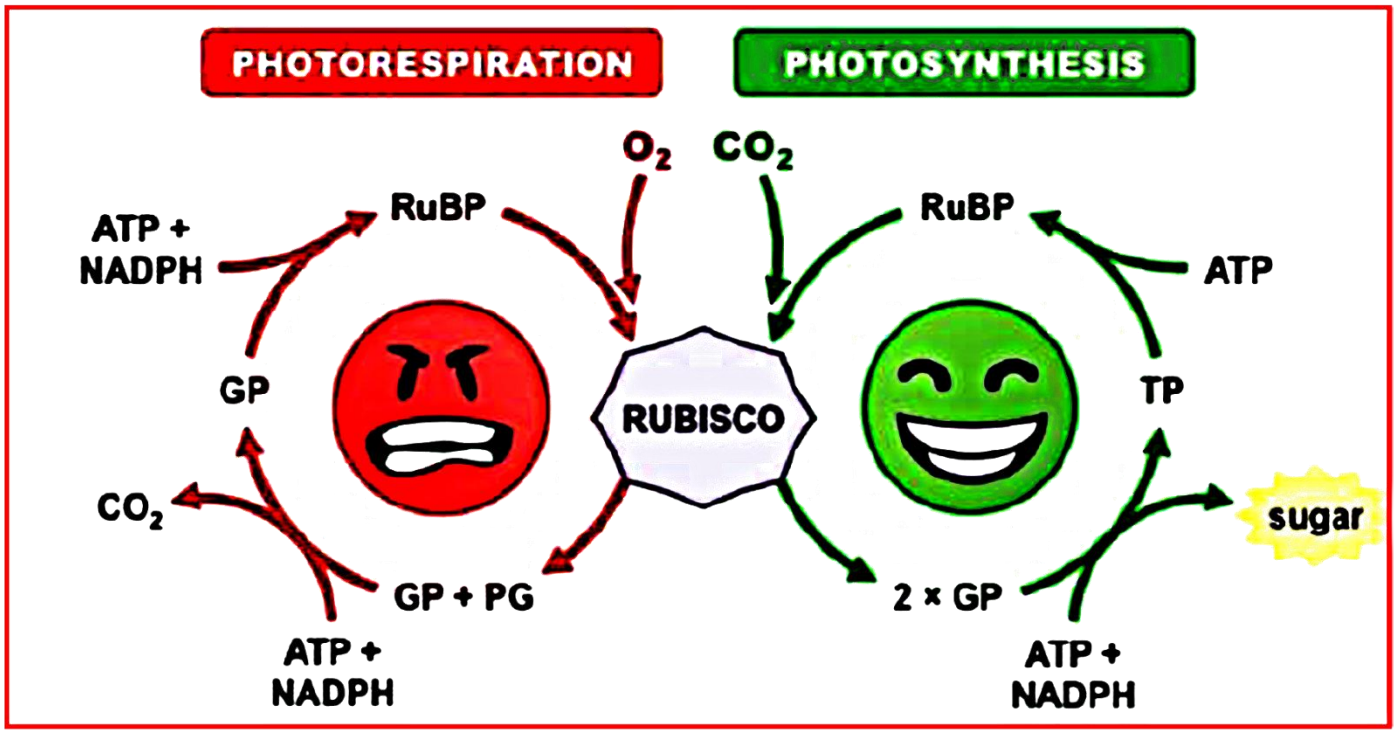
A. C_3 plants

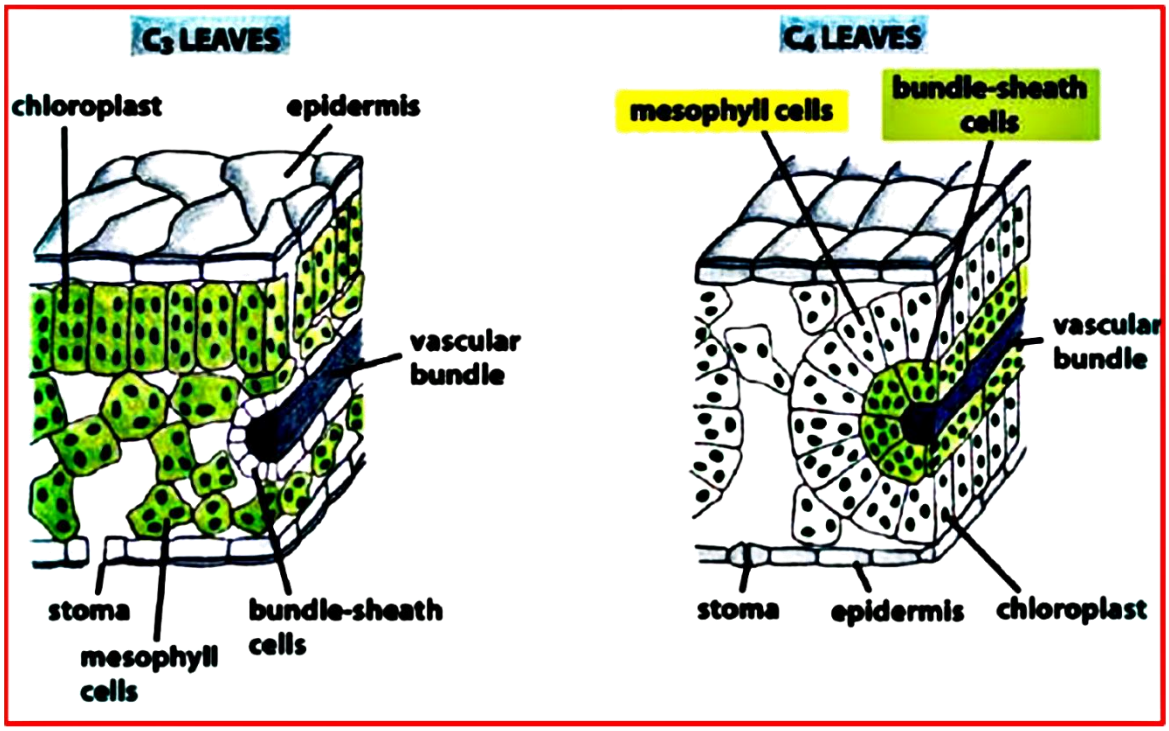
B. C_4 plants

C. C_2 plants

D. C_3 and C_4 plants




PHOTORESPIRATION
PHOTOSYNTHESIS
O_2
CO_2
RuBP
RuBP
ATP + NADPH
ATP
GP
TP
RUBISCO
CO_2
sugar
GP + PG
2 × GP
ATP + NADPH
ATP + NADPH


C_3 LEAVES
chloroplast
epidermis
vascular bundle
stoma
mesophyll cells
bundle-sheath cells
C_4 LEAVES
mesophyll cells
bundle-sheath cells
vascular bundle
stoma
epidermis
chloroplast

Q. The process which makes major difference between C_3 and C_4 plants is

[NEET-2016]

A. Glycolysis **B. Calvin cycle**

C. Photorespiration **D. Respiration**

Q. A process that makes important difference between C_3 and C_4 plants is

[AIPMT-2012]

A. Photosynthesis

B. Photorespiration

C. Transpiration

D. Glycolysis

Q. In Kranz anatomy, the bundle sheath cells have

[AIPMT-2011]

A. Thin walls, no intercellular spaces and several chloroplast

B. Thick walls, many intercellular spaces and few chloroplasts

C. Thin walls, many intercellular spaces and no chloroplasts

D. Thick walls, no intercellular spaces and large number of chloroplasts

Q. Photosynthesis in C_4 plants is relatively less limited by atmospheric CO_2 levels because?

[AIIMS 2016]

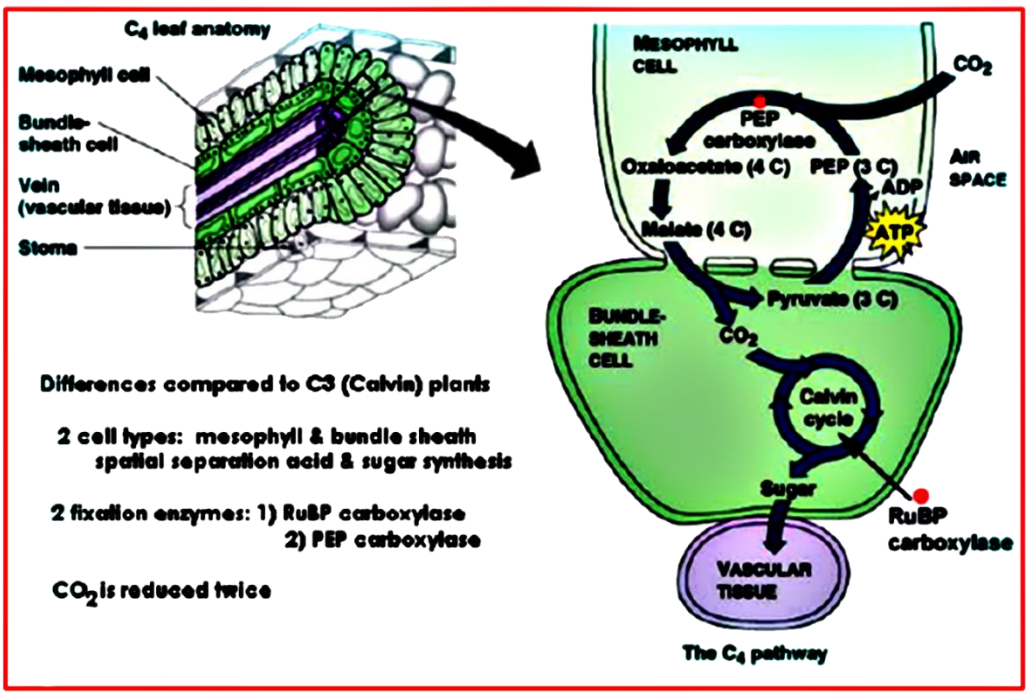
A. there is effective pumping of CO_2 into bundle sheath cells

B. RUBISCO in C_4 plants has higher affinity for CO_2

C. Six carbon acids are the primary initial CO_2 fixation products

D. The primary fixation of CO_2 is mediated via PEP carboxylase

C_4 plants



Q. A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant?

[NEET-2016]

A. Nitrogen fixer

B. C_3

C. C_4

D. CAM

Q. C_4 plants are more efficient in photosynthesis than C_3 plants due to

[AIPMT-2010]

A. Lower rate of photorespiration

B. Higher leaf area

C. Presence of larger number of chloroplasts in the leaf cells

D. Presence of thin cuticle

Q. Which of these is incorrect for C_4 plants?

[JIPMER 2018]

A. Kranz anatomy

B. CO_2 acceptor is PEP

C. PEP Case in mesophyll

D. RUBISCO in mesophyll

Q. C_4 plants have better productivity because?

[AIIMS-2017]

A. C_4 plants absorbs more light

B. C_4 plants absorbs more CO_2

C. C_4 plants lack photorespiration

D. All of these

CAM Plants