

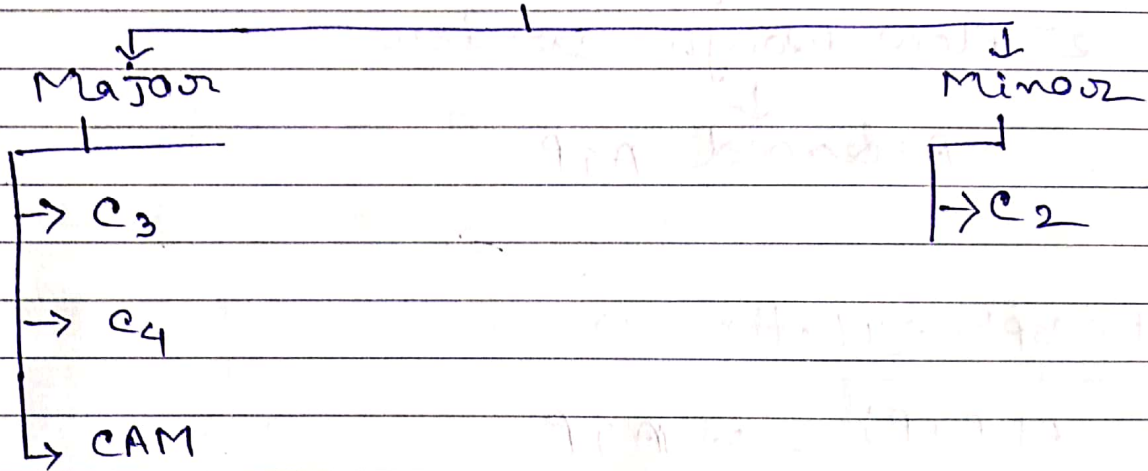
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52	16	17	18	19	20	21	22	04	20	21	22	23	24	25	26
53	23	24	25	26	27	28	29	05	27	28	29	30	31		

Reductive
pentose
phosphate (RPP)
pathway

Dark reaction / photosynthetic carbon
reduction cycle (PCR cycle)

- * Independent of light
- * takes place in stroma

Dark reaction



Calvin cycle / C₃ cycle

Benson and Calvin (1956) Chlorella sp.

C₃ cycle → first stable product → 3C compound

↓
3PGA

(3-phosphoglyceric Acid)

A wise man makes his own decisions; an ignorant man follows the public opinion. - Chinese proverb

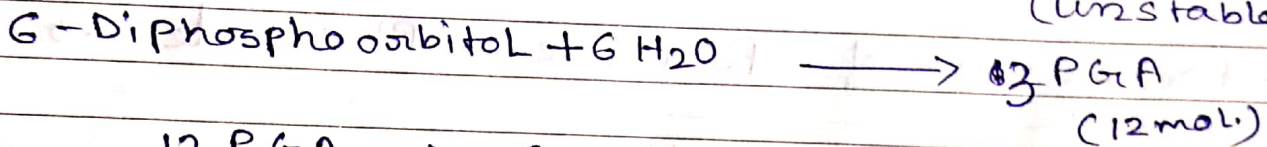
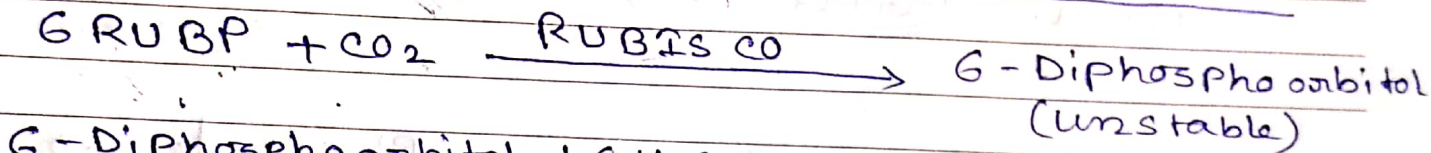
<p>Notes :</p>	<p>Appointment :</p>
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02	6	7	8	9	10	11	12	06	3	4	5	6	7	8	9
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04	20	21	22	23	24	25	26	08	17	18	19	20	21	22	23
05	27	28	29	30	31			09	24	25	26	27	28		

- I) Synthesis of carbohydrate
- II) Regeneration of RUBP

Synthesis of Carbohydrate

I) Carboxylation of or Carbon assimilation →

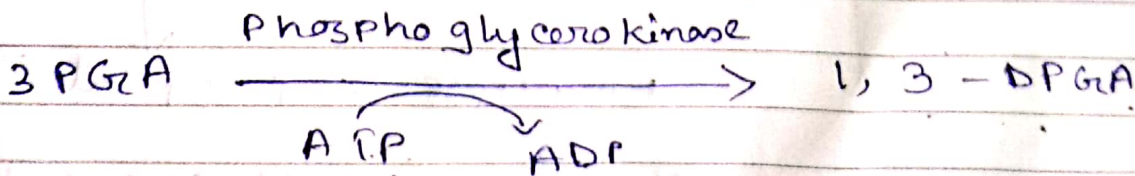
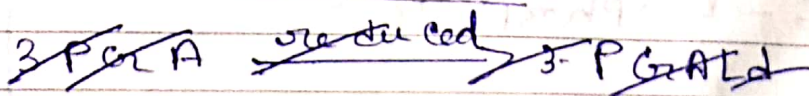


12 PGA → 2 mol. use synthesis of carbohydrate
 10 mol. " regeneration of RUBP

RUBP → Ribulose 1, 5 - bisphosphate (present in cell)

RUBISCO → Ribulose 1, 5 - bisphosphate carboxylase oxygenase

2) Reduction Phase →

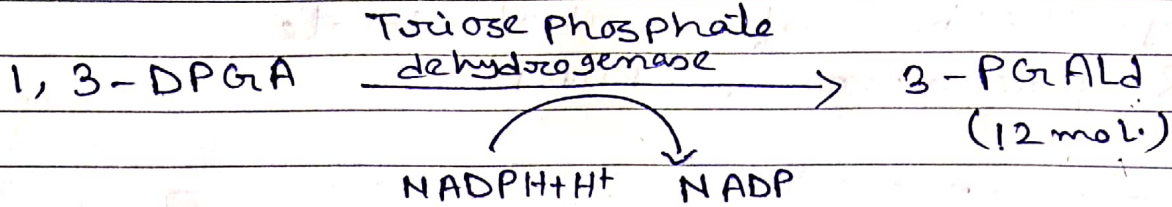


Courage is the ladder on which all the other virtues mount. - Clare Booth Luce.

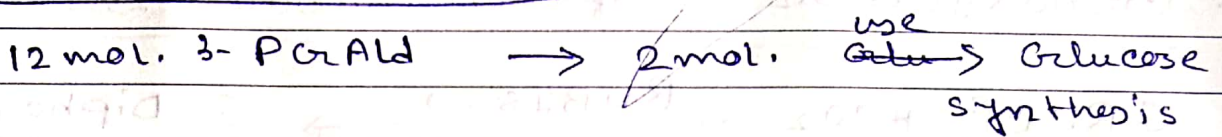
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Appointment:

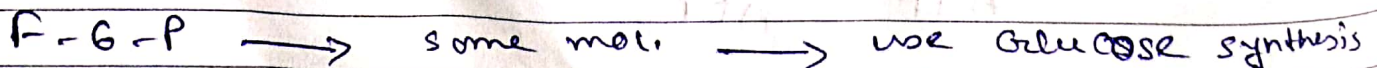
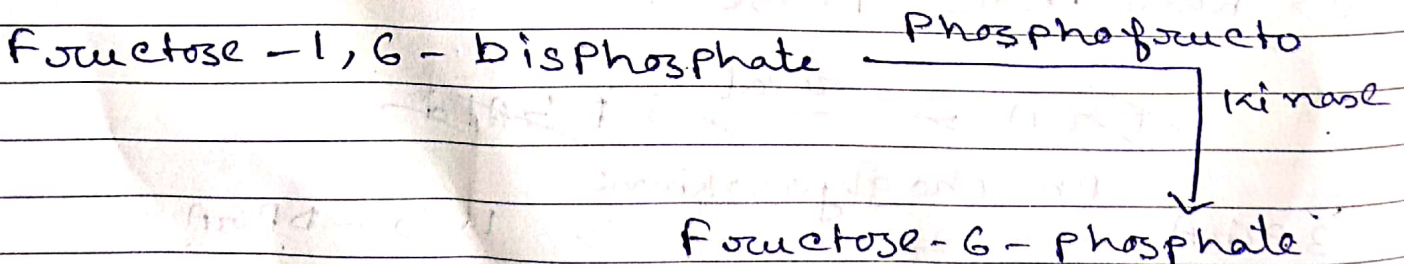
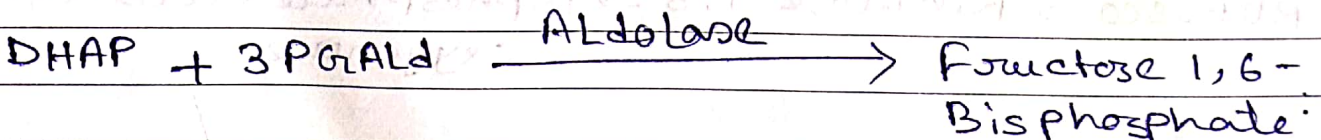
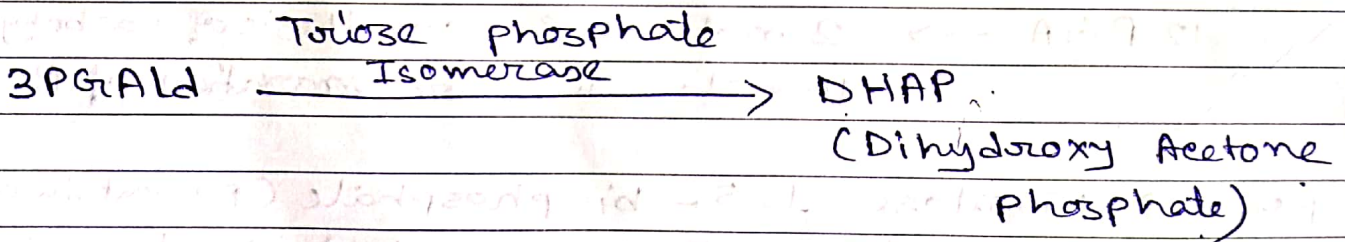
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51	9	10	11	12	13	14	15	03	13	14	15	16	17	18	19
52	16	17	18	19	20	21	22	04	20	21	22	23	24	25	26
53	23	24	25	26	27	28	29	05	27	28	29	30	31		



3) synthesis of glucose →



a) Formation of Fructose-6-Phosphate →



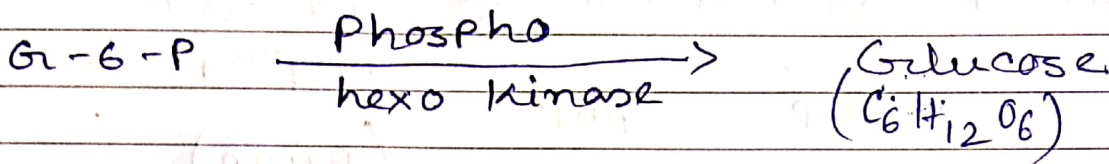
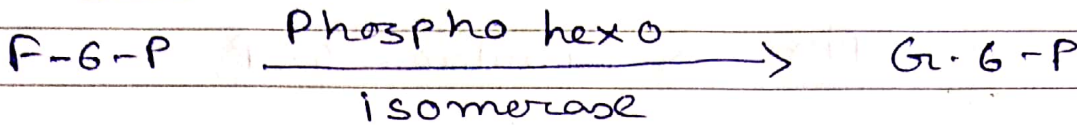
Education is not preparation for life; education is life itself. - John Dewey

Notes :

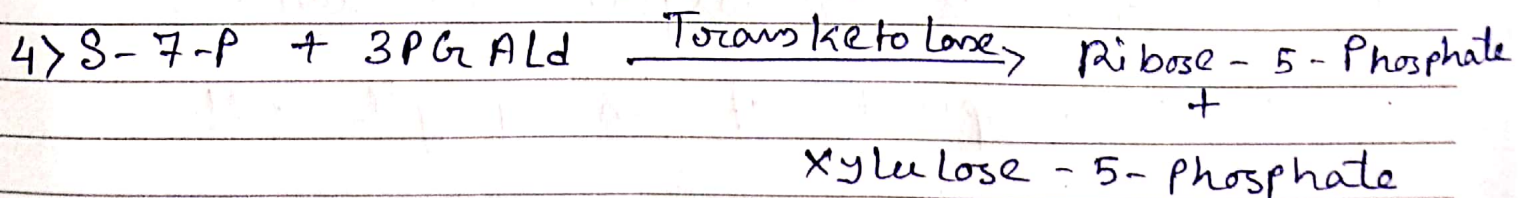
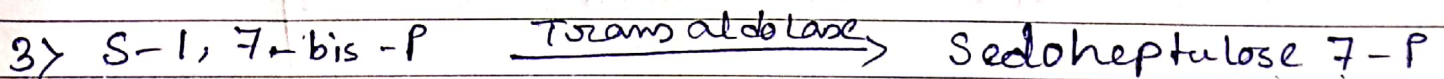
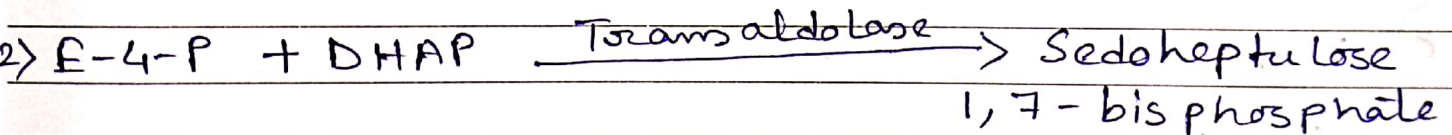
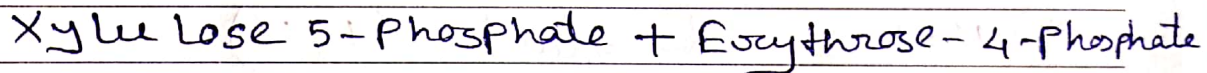
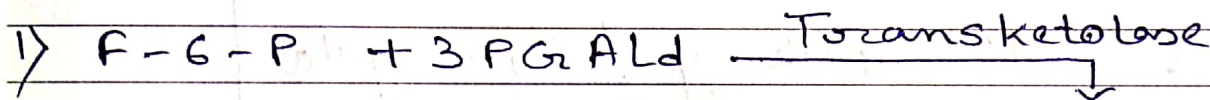
Appointment :

Wk	S	M	T	W	T	F	S	Wk	S	M	T	W	T	F	S
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04	20	21	22	23	24	25	26	08	17	18	19	20	21	22	23
05	27	28	29	30	31			09	24	25	26	27	28		

b) Formation of Glucose →



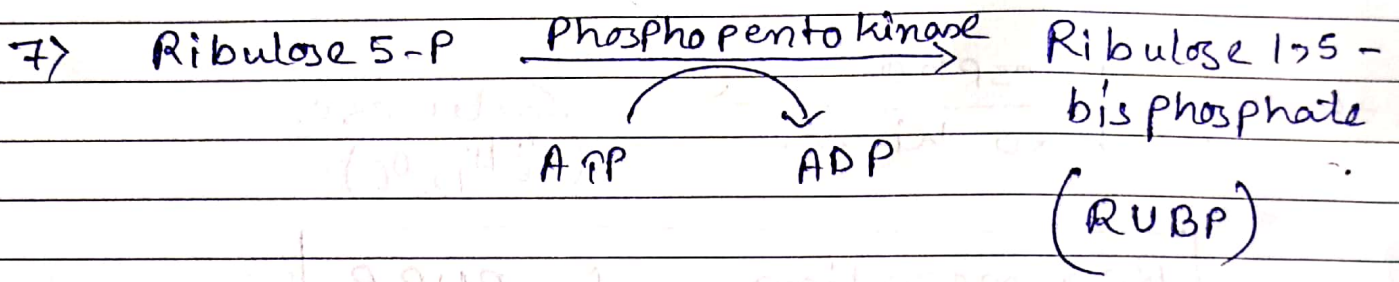
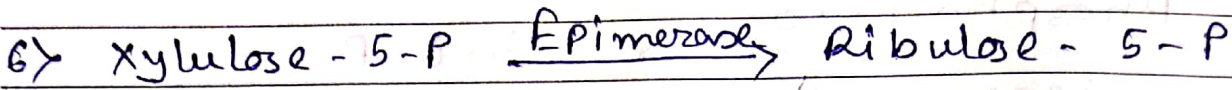
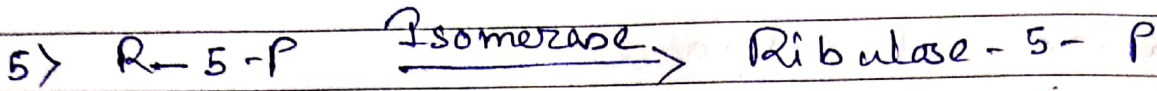
Regeneration of RUBP



Dreamers only dream, but creators bring their dreams into reality. - Robert Fritz

Notes :	Appointment :

January 2019							February 2019								
Wk	S	M	T	W	T	F	S	Wk	S	M	T	W	T	F	S
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04	20	21	22	23	24	25	26	08	17	18	19	20	21	22	23
05	27	28	29	30	31			09	24	25	26	27	28	29	30



*** Hatch & Slack pathway / C_4 - cycle**

* Hatch & Slack (1966)

* Monocot

* (4c) Oxaloacetic Acid i.e. C_4

* Involves 2 carboxylation reaction

1) Chloroplast of mesophyll cell

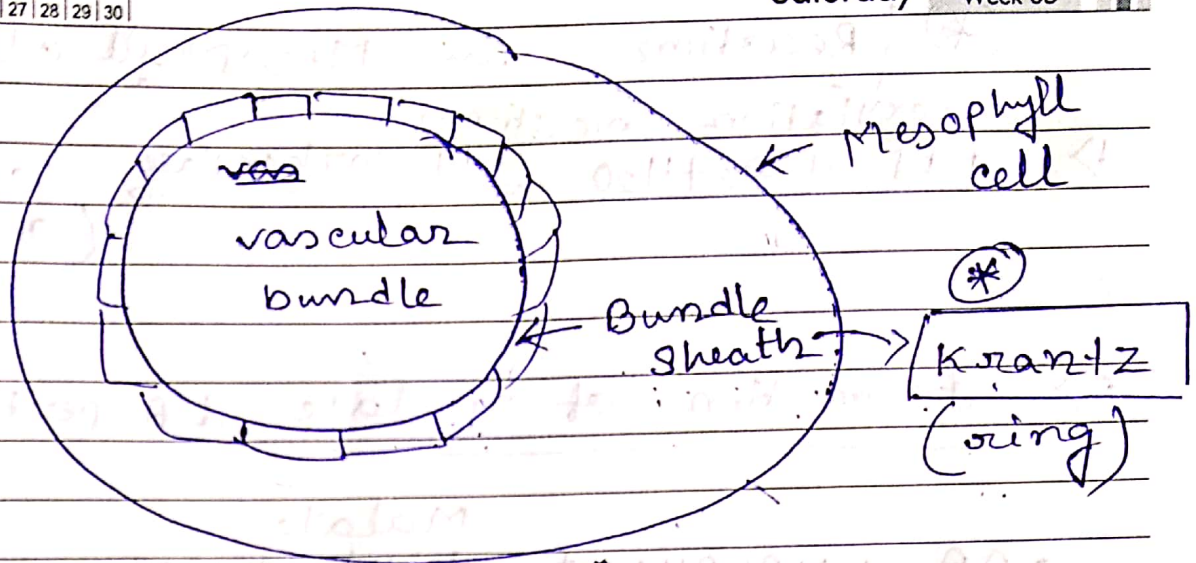
2) " " bundle sheath cell.

Creativity is allowing yourself to make mistakes. Art is knowing which ones to keep. - Scott Adams

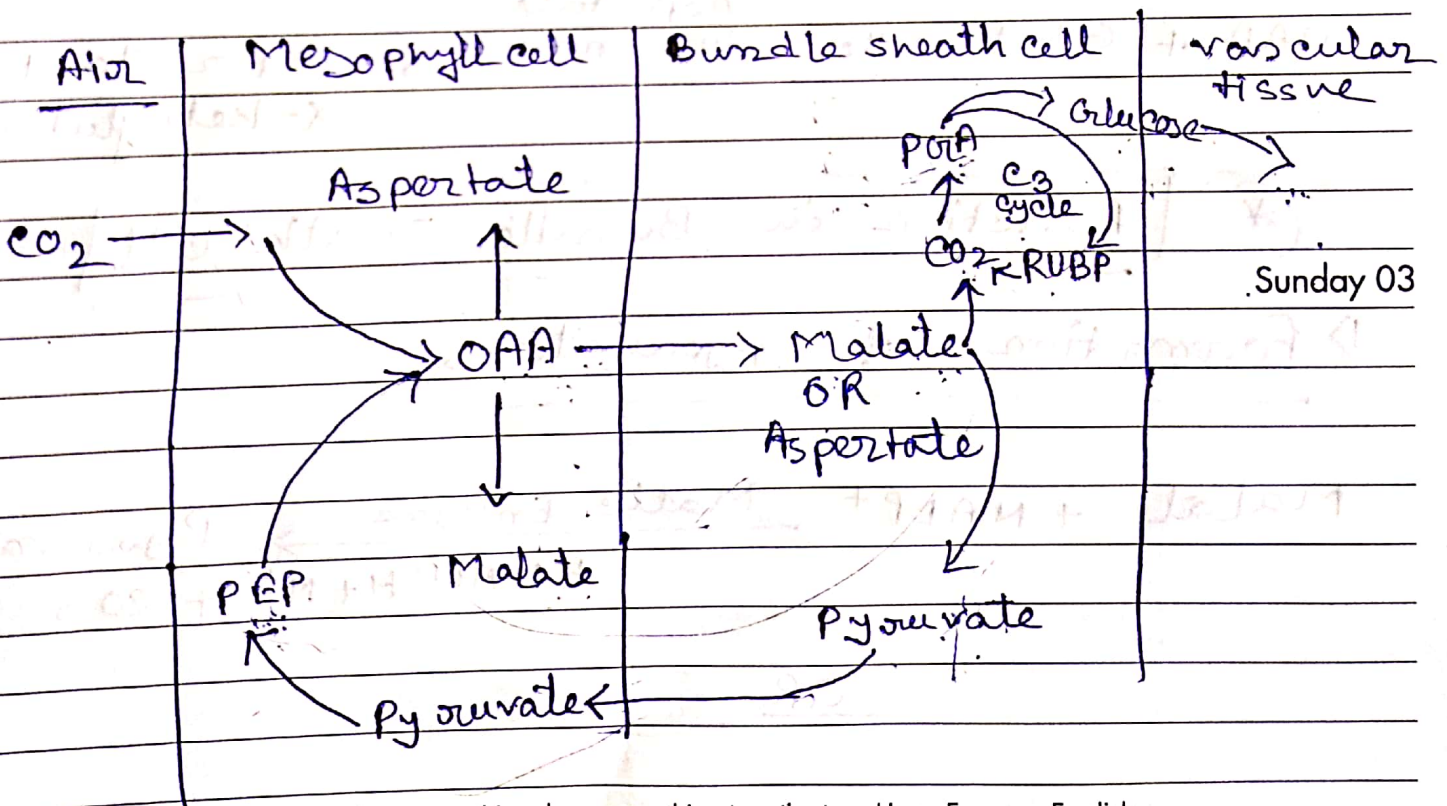
Notes :

Appointment :

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25	26	27	28			08	17	18	19	20	21	22	23
						09	24	25	26	27	28	29	30



C₄ - leaf



Sunday 03

Don't simply retire from something; have something to retire to. - Harry Emerson Fosdick

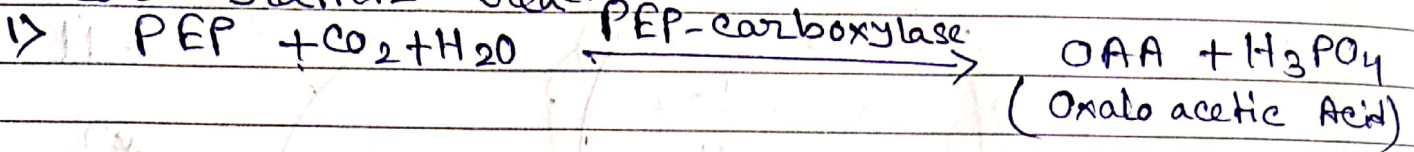
Notes :

Appointment :

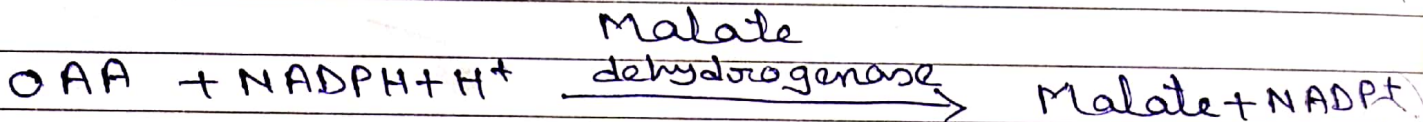
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* Reaction in Mesophyll cell

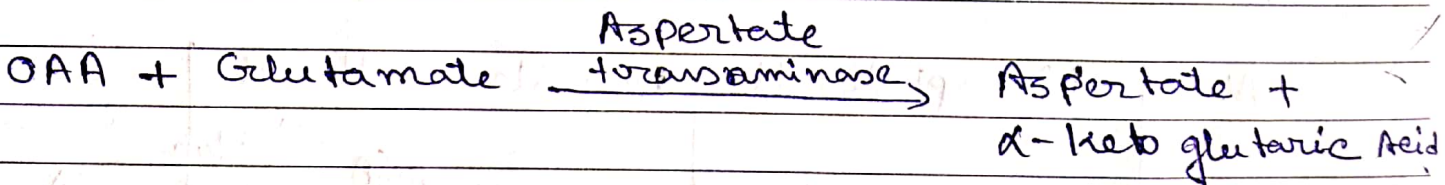
carboxylation reaction →



2) formation of malate & Aspartate (Reduction) →

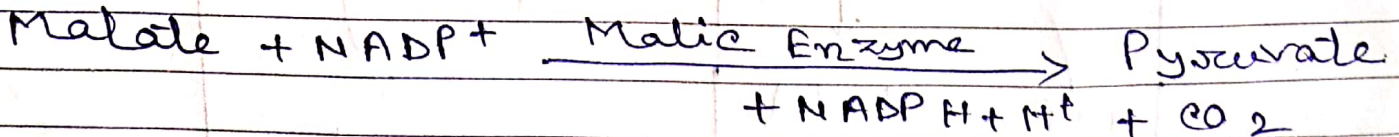


OR



* Reaction in Bundle sheath cell

1) formation of pyruvate →



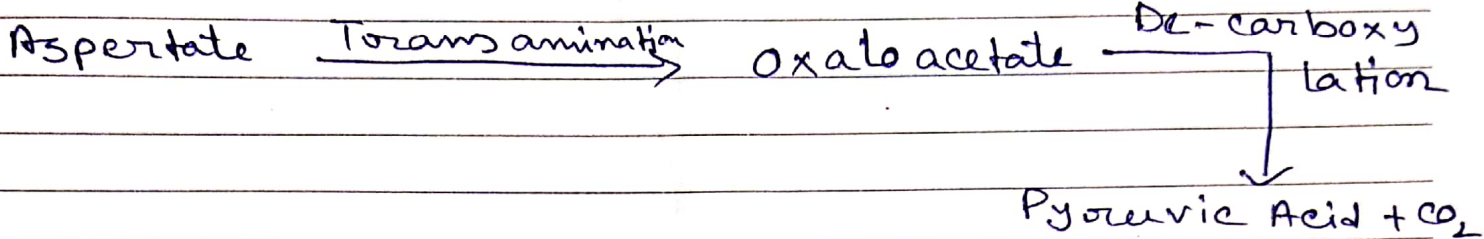
OR

Education is the ability to listen to almost anything without losing your temper. - Robert Frost

Notes :

Appointment :

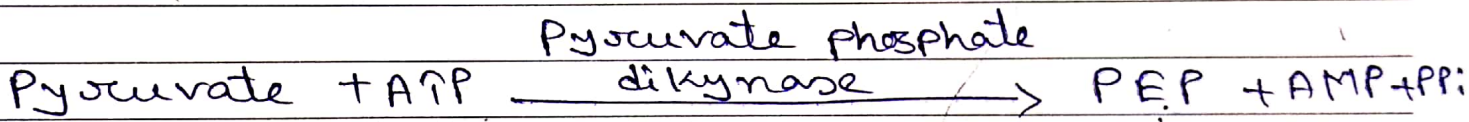
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(*)

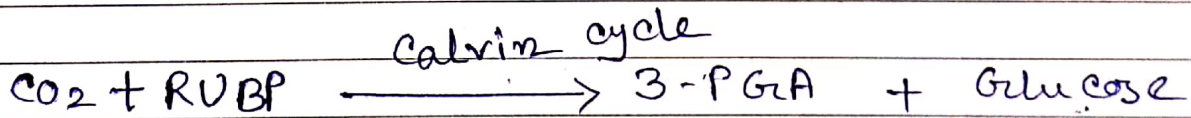
Reaction in Mesophyll cell

1) Phosphorylation of PEP (Phosphoenolpyruvate) \rightarrow



(*)

Reaction in Bundle sheath cell



(*) C₄ - Plants \rightarrow Kranz anatomy

2) Chloroplast Dimorphism

Bundle sheath
grana absent

Mesophyll
grana present

Even if you're on the right track, you get run over if you just sit there. - Will Rogers

Notes :

Appointment :

February 2019													
Wk	S	M	T	W	T	F	S	Wk	S	M	T	W	T
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04	20	21	22	23	24	25	26	08	17	18	19	20	21
05	27	28	29	30	31			09	24	25	26	27	28

C₃

1) First stable product - 3C PGA

2) CO₂ acceptor - RUBP

3) Kranz anatomy absent

4) chloroplast dimorphism absent

C₄

1) 4C - OAA

2) PEP

3) Kranz anatomy present

4) chloroplast dimorphism present.

Dignity consists not in possessing honours, but in the consciousness that we deserve them. - Aristotle

Notes :

Appointment :