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class : Deg. II (Subs.)
Topic : Photosynthesis (Contd.)
Lecture No. - 134
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- Photosynthesis (Continued):

Glucose-6-phosphate looses its H_3PO_4 from the 6th carbon atom in presence of enzyme phosphatase.

Glucose-6-phosphate $\xrightarrow{\text{Phosphatase}}$ Glucose + H_3PO_4

- ©. Regeneration of RUBP:

- Reaction No. (7):

Fructose-6-phosphate combines with G3P in presence of enzyme transketolase to form Erythrose-4-phosphate and xylulose-5-phosphate.

Fructose-6-phosphate + G3P $\xrightarrow{\text{Transketolase}}$ Erythrose-4-phosphate + Xylulose-5-phosphate

- Reaction No. (8):

Erythrose-4-phosphate combines with DHAP in presence of enzyme ~~ad~~ aldolase to form sedoheptulose 1,7-biphosphate.

Erythrose-4-phosphate + DHAP $\xrightarrow{\text{Aldolase}}$ Sedoheptulose-1,7-biphosphate.

- **Reaction No. (9):**

Sedoheptulose-1,7-biphosphate looses its H_3PO_4 of first C-atom in presence of enzyme sedoheptulose phosphatase to form sedoheptulose-7-phosphate.

In this reaction, one molecule of water is needed.

Sedoheptulose-1,7-biphosphate $\xrightarrow[\text{phosphatase}]{\text{sedoheptulose}}$ Sedoheptulose-7-phosphate + H_3PO_4

- **Reaction No. (10): Combination**

Sedoheptulose-7-phosphate combines with G3P in presence of enzyme transketolase to form ribose-5-phosphate and xylulose-5-phosphate.

Sedoheptulose-7-phosphate + G3P $\xrightarrow{\text{Transketolase}}$ Ribose-5-phosphate + xylulose-5-phosphate

- **Reaction No. (11): Isomerization**

Ribose-5-phosphate converts into ribulose-5-phosphate in presence of enzyme isomerase.

Ribose-5-phosphate $\xrightarrow{\text{Isomerase}}$ Ribulose-5-phosphate

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