

Week 4-5

Revision Questions

Unit 1: Concept of Metabolism

1. Explain briefly:
 - Allosteric enzymes
 - Coupled reactions
2. Short notes on:
 - Isoenzymes
 - Covalent modulation
3. Differentiate between anabolism and catabolism.
4. List the major anabolic and catabolic pathways.
5. Justify the statement: "Catabolic pathways are convergent in nature, whereas anabolic pathways are divergent".

Revision Questions - PHOTOSYNTHESIS

Q1. Explain the following

- (i) Antennae complex
- (ii) Absorption & action spectrum
- (iii) Jagendorf's experiment
- (iv) Pentose phosphate pathway

Q2. Discuss photorespiration & its significance.

Q3. Compare the chemiosmotic mechanism of ATP synthesis in mitochondria & chloroplast.

Q4. Differentiate between the following:

- (i) C₄ & CAM pathway
- (ii) Cyclic & non-cyclic photophosphorylation
- (iii) PSI & PSII
- (iv) Oxidative and photophosphorylation

Q5. Describe three phases of Calvin cycle.

Indicate the steps where ATP and NADPH are utilized.

→ contd (Photosynthesis)

Q6: Name the following:

- (i) Substrate for photorespiration
- (ii) Location of Rubisco in C₄ plants
- (iii) Full form of Rubisco
- (iv) location of OEC (oxygen-evolving complex)
- (v) First product of C₃ + C₄ Pathway
- (vi) Carboxylation enzymes of C₃ + C₄ pathway
- (vii) Organic acid produced in CAM pathway

Q7. Define:

- (i) Light + CO₂ compensation points
- (ii) Emerson enhancement effect
- (iii) Red drop
- (iv) Quantum yield
- (v) Photosynthetic phosphorylation

Q8. Contributions of scientists associated with photosynthesis