

Shivaji University, Kolhapur
Question Bank for Mar 2022 (Summer) Examination

Subject Code- 82888 Subject Name- Plant Physiology and Metabolism

UNIT I

- Q. No. 1. Explain active mechanism of solute transport in phloem.
- Q. No. 1. Write on phloem loading of photoassimilates.
- Q. No. 1. Describe mechanism of phloem unloading.
- Q. No. 1. Elucidate passive mechanism of solute transport.
- Q. No. 1. Comment upon source to sink pathways.

UNIT II

- Q. No.2. Write detailed account of C3 pathway.
- Q. No.2. Describe plant respiration.
- Q. No.2. Explain C4 photosynthesis in detail.
- Q. No.2. Elucidate modern concept of Electron transport chain.
- Q. No.2. Give details of anaerobic respiration.

UNIT III

- Q. No.3. Explain biosynthesis of Lysine.
- Q. No.3. Write on biosynthesis of Cysteine.
- Q. No.3. Elucidate ammonium assimilation.
- Q. No.3. Describe biosynthesis of terpenes.
- Q. No.3. Comment upon the roles of phenols.

UNIT IV

- Q. No.4. Describe biosynthesis of ABA.
- Q. No.4. Write on response of plants to temperature stress.
- Q. No.4. Elucidate resistance mechanism developed by the plants against pathogen attack.
- Q. No.4. Comment upon physiological effects of ABA.
- Q. No.4. Give detailed account of tolerance mechanisms developed by the plants against salt stress.

Q. No. 5.

UNIT I

- a)
 - 1. Explain: Electro-Osmotic theory of solute transport
 - 2. Write on: Pressure Flow hypothesis
 - 3. Give detailed account of apoplastic phloem loading
 - 4. Elaborate: Competition of sink tissue for photoassimilates
 - 5. Add a note on: Long term alterations in source

UNIT II

- b)
 - 1. Explain: Photo oxidation of water
 - 2. Write on: RUBISCO
 - 3. Describe: Biochemical subtypes of C4 plants
 - 4. Elaborate: Photophosphorylation
 - 5. Give detailed account of modification of CAM

Q. No. 6.

UNIT III

- a)
 - 1. Explain: Nitrate assimilation
 - 2. Write on: Biosynthesis of proline
 - 3. Describe: Biosynthesis of Serine
 - 4. Add a note on: Roles of terpenes
 - 5. Elaborate: Shikimate pathway

UNIT IV

- b)
 - 1. Write on: Transport of ABA
 - 2. Explain: Mechanism of action of ABA
 - 3. Describe: Response of plants to insect attack
 - 4. Elaborate: Tolerance mechanisms of plants against drought
 - 5. Give detailed account of Auxin transport

Q. No. 7. Write short notes on

UNIT I

- a)
 - 1. Objections to Protoplasmic streaming theory
 - 2. Diffusion theory
 - 3. Partitioning of sugars
 - 4. Role of sieve tube element in translocation of solutes
 - 5. Sink strength

UNIT II

- b)
 - 1. Difference in Photosystem I and Photosystem II
 - 2. PEPcase
 - 3. Inhibitors of respiration
 - 4. Ecological significance of CAM
 - 5. ATP synthase

UNIT III

- c)
 1. Nitrate reductase
 2. Synthesis of Glutamic acid
 3. Roles of tannins
 4. Conversion of nitrite to ammonia
 5. GOGAT

UNIT IV

- d)
 1. Role of ABA in stomatal conductance
 2. Heat Shock Proteins
 3. Salt glands
 4. Specific ion effect
 5. Transport of cytokinin

UNIT I

- e)
 1. Modification of Munch hypothesis
 2. Symplastic phloem loading
 3. Allocation of fixed carbon
 4. Source to sink ratio
 5. Contractile protein theory

UNIT III

- f)
 1. Nitrite reductase
 2. Synthesis of Aspartate
 3. Roles of flavonoids
 4. Glutamine synthetase
 5. Roles of alkaloids