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BCS 553

IV Semester M.Sc. Examination, September/October 2022

BIOCHEMISTRY
Plant Biochemistry

Time : 3 Hours

Max. Marks : 70

1. Answer **any ten** of the following :

(10×2=20)

- a) Write the significance of leghemoglobin.
- b) What are CAM plants ?
- c) What is Q cycle ?
- d) Differentiate between oxidative phosphorylation and photophosphorylation.
- e) What are anaplerotic reactions ? Give an example.
- f) Give two examples for inhibitors of ETC.
- g) What are guard cells ?
- h) Explain the biological significance of glutathione.
- i) What are vascular bundles ?
- j) What are secondary metabolites ? Give two examples.
- k) What are jasmonates ?
- l) What are ionophores ?

Answer **any five** of the following :

(5×10=50)

2. a) Discuss the carbon dioxide assimilation in Calvin cycle.
b) Explain the Z scheme of photosynthesis in plants. **(5+5=10)**
3. a) Describe the structure of ATP synthase complex and explain how ATPs are synthesised.
b) Discuss symbiotic nitrogen fixation. **(5+5=10)**
4. a) Elaborate the physiological effects and mechanism of action of auxins and gibberellins.
b) Explain the extraction and characterization of any one secondary metabolite from plants. Add a note on its biological significance. **(5+5=10)**

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5. a) Justify Ti plasmid as transformation vector in plant.
b) Discuss the structure and components of plant cell. How they differ from an animal cell. (5+5=10)
6. a) How do the plants respond to abiotic stress ?
b) Discuss any one pathogen induced plant disease. (5+5=10)
7. a) Describe the plant mitochondrial electron transport. Add a note on its regulation.
b) Discuss water uptake and transport in plants. (5+5=10)
8. a) Explain passive and active transport across cell membrane with an example.
b) Give an account on virus induced cell transformation. (5+5=10)
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