



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Honours Examinations 2022

(Under CBCS Pattern)

Semester - VI

Subject : BOTANY

Paper : C13-T

Plant Metabolism

Full Marks : 40

Time : 2 Hours

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer any *four* of the following questions : 5×4=20

- (a) Define secondary messengers in the signal transduction system. What are the three major classes of second messengers?
- (b) Explain with suitable example how the covalent modifications of regulatory enzymes control a biosynthetic pathway. 2+3
- (c) Write a brief note on “regulation of EMP pathway”.
- (d) Write short notes on (any *two*) [2.5×2]
- (i) Jagendorf’s experiment
- (ii) NADH shuttle mechanism
- (iii) Transamination

(e) Define the following : 1×5

- (i) Isozymes
- (ii) Symbiosome
- (iii) Calmodulin
- (iv) Emersons enhancement effect
- (v) Uncouplers

(f) What is cyanide resistant respiration? Write down the physiological significance of cyanide resistant respiration. 3+2

2. Answer any *two* of the following questions : 10×2=20

- (a) Explain Pentose-Phosphate-Pathway in plants. What is the role of Pentose-Phosphate-Pathway? How does Pentose-Phosphate-Pathway differ from glycolysis? 5+3+2
 - (b) What are nodulin (*Nod*) genes and nodulation (*nod*) genes? Write a note on nitrogenase enzyme complex and its role in nitrogen fixation. 2+2+6
 - (c) Write down the key differences between Cyclic and Non-Cyclic Photophosphorylation. Explain the process of starch hydrolysis during cereal germination. 5+5
 - (d) Mention the role of CAMP as second messenger. Briefly discuss on the MAP kinase cascade. 5+5
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