

Bankura University
B.Sc 4th Semester (Honours) Examination, 2022
Subject: Botany

Course ID: 41314

Course Code: SHBOT/404/GE-4

Course Title: Plant Physiology and Metabolism

Full Marks: 25

Times: 1h 15 mins

The figures in the margin indicate full marks

Answer all the questions.

UNIT I

- 1. Answer any five of the following questions: (5×1=5)**
- a) Define water potential.
 - b) What is active and passive transport?
 - c) Define guttation.
 - d) Write down the full form of Rubis-CO.
 - e) Name the cell organelles where Photorespiration takes place.
 - f) Give example of one nitrogen fixing symbiotic bacteria.
 - g) Write full name of DNP.
 - h) Name two synthetic plant hormones.

UNIT II

- 2. Answer any two of the following questions: (5×2=10)**
- a) What are essential elements? Write the differences between macro and micro nutrients. 2+3
 - b) What is enzyme inhibition? Describe various factors that affect the activity of enzymes. 1+4
 - c) Write differences between
(1) PS-I and PS-II (2) C3 and C4 plants. 2.5×2
 - d) What is nitrogen fixation? Describe the process of Biological Nitrogen fixation in leguminous plants. 1+4

UNIT III

- 3. Answer any one of the following questions: (10×1=10)**
- a) What is transpiration? Describe the various factors which affect the rate of transpiration. Write the differences between transpiration and guttation. 2+6+2
 - b) What are plant growth regulators? Discuss the physiological roles of gibberellin and cytokinin in plants. 2+4+4