

**Bankura University**  
**B.Sc 4<sup>th</sup> Semester (Honours) Examination,2021**  
**Subject: Botany**

Course ID: 41314

Course Code: SHBOT/404/GE-4

**Course Title: Plant Physiology and Metabolism**

Full Marks: 25

Time: 1h 15 min

The figures in the margin indicate full marks

**Answer all the questions.**

**UNIT I**

**1. Answer *any five* of the following questions: (1X5=5)**

- a) What is hydathode?
- b) What is antitranspirant?
- c) Mention two important deficiency symptoms of iron in plants?
- d) What do you mean by co-factor?
- e) What do you mean by antenna pigment?
- f) In which part of the cell are glycolytic enzymes located?
- g) Write down the name of key enzyme for biological N<sub>2</sub> fixation.
- h) What is Day Neutral Plant?

**UNIT II**

**2. Answer *any two* of the following questions: (5x2=10)**

- a) Distinguish between osmotic pressure and osmotic potential ? What happens when a living plant cell is placed in a hypertonic solution? What do you mean by active transport? (2+2+1)
- b) What do you mean by photosynthetic phosphorylation? What is the difference between C<sub>4</sub> and CAM plants? What is reaction centre. (2+2+1)
- c) Where enzymes of TCA cycle are located? Write down the significance of Pentose phosphate pathway. What do you mean by biological nitrogen fixation? (1+3+1)
- d) What are plant growth regulators? Discuss the physiological role of gibberellin in plant. (2+3)

**UNIT III**

**3. Answer *any one* of the following questions: (10X1=10)**

- a) What is phytochrome? Describe the role of phytochrome in flowering? (2+8)
- b) Briefly describe the phloem loading and unloading mechanism of plant. What is basic composition of phloem sap? (8+2)