

Roll No. : .....

Total No. of Questions : 11 ]

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# **BOTASEM-108**

**M.Sc. (Ist Semester) Examination Dec., 2022**

**BOTANY**

Paper - BOT-104

**(Biochemistry and Plant Metabolism)**

*Time : 3 Hours ]*

*[ Maximum Marks : 40*

The question paper contains three Sections.

**Section-A** (Marks : 1 × 10 = 10)

*Note :-* Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

**Section-B** (Marks : 3 × 5 = 15)

*Note :-* Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

**Section-C** (Marks : 5 × 3 = 15)

*Note :-* Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

**Section-A**

1. (i) What do you understand by  $\beta$ -oxidation ?
- (ii) Write chemical composition of Starch.

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- (iii) Give the example of tertiary proteins.
- (iv) Give the names of *three* enzymes.
- (v) What is Thylakoid ?
- (vi) C<sub>4</sub> cycle was discovered by .....
- (vii) Where does electron transfer chain occur ?
- (viii) What do you understand by Glycolysis ?
- (ix) What are coupled reactions ?
- (x) Define the term alkaloid.

### **Section-B**

2. Give a detailed note on structure and functions of Starch.

*Or*

Write notes on the following :

- (i) Chemical structure of cellulose
  - (ii)  $\alpha$ -oxidation of lipids
3. Discuss about quaternary structure of Proteins.

*Or*

Write short notes on the following :

- (i) Lock and key theory
  - (ii) Functions of primary proteins
4. Write a note on 'Kranz Anatomy'.

*Or*

Write notes on the following :

- (i) Photorespiration
- (ii) Chloroplast structure

5. Discuss in brief about Glyoxalate cycle.

*Or*

Write notes on the following :

- (i) Electron transport chain cycle
- (ii) Chemo-osmotic regeneration of ATP

6. Write a note on Steroidal Compounds.

*Or*

Write short notes on the following :

- (i) Tannin biosynthesis
- (ii) High energy molecules

### **Section–C**

- 7. Write a detailed note on classification and functions of Carbohydrates.
- 8. Discuss in detail about mechanism of action of Enzymes.
- 9. Give a detailed note on dark reactions of Photosynthesis.
- 10. Write an essay on TCA cycle.
- 11. Describe in detail about classification, distribution and functions of alkaloids.