

5645

**M.Sc. (Previous) Examination - 2024**

**BOTANY**

**Fifth Paper**

**[Plant Physiology & Metabolism]**

**Time Allowed: Three Hours**

**Maximum Marks: 100**

*Each theory paper will have 9 questions, out of which a student has to attempt 5 questions and the question no. 1 will be compulsory. The question no. 1 will carry 20 marks and will be of short type of questions with a limit of 20 words.*

*No supplementary answer book will be given to any candidate. Hence the candidates should write the answer precisely in the main answer-book only.*

*All the parts of one question should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.*

**1. Short answer type questions:**

**[2×10=20]**

- (a) What is solute potential?
- (b) Differentiate between uniport and symport mechanisms of transport.
- (c) Give names of two polysaccharides.
- (d) Differentiate between photosystem I and photosystem II.
- (e) What do you mean by photorespiration?
- (f) What are indole alkaloids?
- (g) Write two names of synthetic auxins.
- (h) What is gluconeogenesis?
- (i) Define photoperiodism.
- (j) What is ascent of sap?

**UNIT-I**

**2. Write a detailed note on classification and mechanism of enzyme action.**

**[20]**

**OR**

**Write notes on the following -**

**[10+10=20]**

- (a) Ramchandran plot
- (b) Active and passive mode of transport

**UNIT-II**

**3. Write about classification, structure and functions of polysaccharides.**

**[20]**

**OR**

**Write notes on the following:**

**[10+10=20]**

- (a) C<sub>4</sub> plants.
- (b) Photosystem I and photosystem II.

### UNIT-III

4. Define secondary metabolites. Add a comprehensive note on steroids. [20]

**OR**

Writes notes on the following -

[10+10=20]

- (a) Pentose phosphate pathway
- (b) Lipid Biosynthesis.

### UNIT-IV

5. Describe in detail about bioassay, physiological roles and mode of action of cytokinins. [20]

**OR**

Write notes on the following -

[10+10=20]

- (a) Abscisic acid
- (b) Vernalization

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