Roll No..... Total No. of Printed Pages : 4

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Second Semester Online Examination, May-June, 2022

M. Sc. BOTANY

Paper IV

PLANT METABOLISM

Time : Three Hours] [Maximum Marks : 80

Note : *Part A and B of each question in each unit consist of 'very short answer type question' which are to be answered in one or two sentences. Part C 'Short answer type' and D 'Long answer type' of each question should be answered within the word limit mentioned.*

UNIT-I

1. (A) What is quantum yield in photosynthesis ? **2**

(B) C_4 plants are more efficient as compared to C_3 plant. Give two reasons. **2**

(C) What is photosystem I and photosystem II ? *(word limit 200-250)* **4**

OR

Define absorption spectrum and action spectrum.

P.T.O.

(D) Describe the flow of electrons during non-cyclic photophosphorylation.

(word limit 400-450) **12**

OR

What is carbon pathway in photosynthesis ? Describe the various steps of C_3 pathway.

UNIT-II

2. (A) What is substrate level phosphorylation ?

2

(B) How many molecules of NADH are produced in the glycolytic conversion of one molecule of glucose to pyruvate. Plention steps. **2**

(C) What are the components of ATP ?

(word limit 200-250) **4**

OR

Explain synthesis of glycerol.

(D) Give an account of TCA cycle with special reference to enzymes involved.

(word limit 400-450) **12**

OR

Describe the metabolic pathway conversion of fat in to carbohydrates in plants.

UNIT-III

3. (A) What is nitrification ? **2**

(B) What is transamination ? **2**

(C) What is the role of nitrogenase in plants ?

(word limit 200-250) **4**

OR

Explain the role of nitrogen reduction ?

(D) Discuss the mechanism of nitrate uptake and reduction in plants.

(word limit 400-450) **12**

OR

Give an account of nodula formation in plants.

UNIT-IV

4. (A) What is florigen concept ? **2**

(B) What is photoperiodic induction ? **2**

(C) What are flowering inhibitors ? Explain.

(word limit 200-250) **4**

OR

Describe few phytochrome mediated responses in flowering plants.

(D) Discuss the role of light in physiology of flowering. *(word limit 400-450)* **12**

OR

Give an account of andogenous clock and its regulation.

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