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B—49—2019

FACULTY OF SCIENCE

B.Sc. (Third Year) (Sixth Semester) EXAMINATION

MARCH/APRIL 2019

(CGPA Pattern)

BOTANY

Paper XIV

(Plant Metabolism, Biochemistry and Biotechnology)

(Friday, 22-3-2019)

Time : 10.00 a.m. to 12.00 noon

Time—2 Hours

Maximum Marks—40

N.B. :— (i) Attempt All questions.

(ii) All questions carry equal marks.

(iii) Draw neat and well-labelled diagrams wherever necessary.

1. What is Glycolysis ? Describe the process and significance of Glycolysis. 8

Or

Write in brief :

(a) Cyclic photophosphorylation

(b) Hill's reaction.

2. What are enzymes ? Describe induced fit model of enzymes action. 8

Or

Write in brief :

(a) Physical method of Nitrogen fixation

(b) Asymbiotic Nitrogen fixation.

3. Define Anther culture. Describe various steps involved in Anther culture and production of haploids. 8

Or

Write in brief :

(a) Production of secondary metabolites

(b) Applications of somatic hybridization.

P.T.O.

4. What is genetic engineering ? Explain *Agrobacterium* mediated gene transfer. 8

Or

Write in brief :

- (a) Genomic and *c*-DNA Library
 - (b) Cloning vectors.
5. Write short notes on (any four) : 8
- (a) Draw well labelled diagram of Mitochondria.
 - (b) Aerobic respiration
 - (c) Prosthetic group
 - (d) Denitrification
 - (e) Totipotency
 - (f) *Agrobacterium tumefaciens*.