

### III/ Bot (iii)

2 0 1 6

( 3rd Semester )

BOTANY

THIRD PAPER

( **Plant Physiology, Biochemistry and Ecology** )

*Full Marks : 55*

*Time : 2½ hours*

( PART : B—DESCRIPTIVE )

( *Marks : 35* )

*The figures in the margin indicate full marks  
for the questions*

1. Describe the mechanism of stomatal transpiration in plants. 7

*Or*

Write notes on the following :  $3\frac{1}{2} \times 2 = 7$

- (a) Micro- and macro- nutrients  
(b) Photorespiration

2. What are enzymes? Describe the mechanisms of enzyme action.  $1+6=7$

( 2 )

*Or*

Write accounts on the following :  $3\frac{1}{2} \times 2 = 7$

- (a) Symbiotic N-fixation  
(b) Oxidative phosphorylation

3. What are growth hormones? Elucidate the physiological role of auxin and ethylene.  $1+6=7$

*Or*

Write notes on the following :  $3\frac{1}{2} \times 2 = 7$

- (a) Photoperiodism  
(b) Senescence

4. Describe the mechanism of DNA replication in *E.coli*. 7

*Or*

Write notes on the following :  $3\frac{1}{2} \times 2 = 7$

- (a) Lipids  
(b) Types of amino acid

5. Define ecosystem. Give an account on abiotic and biotic components of an ecosystem.  $1+6=7$

*Or*

Write notes on the following :  $3\frac{1}{2} \times 2 = 7$

- (a) Ecological succession  
(b) Ecotypes and ecads

★★★

Subject Code : **III/** Bot (iii)

Booklet No. **A**

Date Stamp .....

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**To be filled in by the Candidate**

DEGREE 3rd Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**

Subject .....

Paper .....

**To be filled in by the  
Candidate**

DEGREE 3rd Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2016**

Roll No. ....

Regn. No. ....

Subject .....

Paper .....

Descriptive Type

Booklet No. B .....

**INSTRUCTIONS TO CANDIDATES**

1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.
2. This paper should be **ANSWERED FIRST** and submitted within 45 minutes of the commencement of the Examination.
3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.

Signature of  
Scrutiniser(s)

Signature of  
Examiner(s)

Signature of  
Invigilator(s)

**/58**

**III/ Bot (iii)**

**2 0 1 6**

( 3rd Semester )

**BOTANY**

THIRD PAPER

**( Plant Physiology, Biochemistry and Ecology )**

( PART : A—OBJECTIVE )

( Marks : 20 )

*The figures in the margin indicate full marks for the questions*

SECTION—I

( Marks : 5 )

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

- 1.** Calvin and Benson studied steps of dark reaction in green algae

(a) *Chlamydomonas* (     )

(b) *Volvox* (     )

(c) *Chlorella* (     )

(d) *Vaucheria* (     )

( 2 )

**2.** The first stable product of Hatch and Slack cycle is

- (a) 3-phosphoglyceric acid ( )
- (b) 3-phosphoglyceraldehyde ( )
- (c) erythrose-4-phosphate ( )
- (d) oxaloacetic acid ( )

**3.** Phytochrome in plant plays a role in

- (a) pollination ( )
- (b) flowering ( )
- (c) respiration ( )
- (d) photosynthesis ( )

**4.** The genetic informations on DNA get transferred to a complementary sequence of RNA in the process called

- (a) DNA replication ( )
- (b) transcription ( )
- (c) translation ( )
- (d) translocation ( )

( 3 )

5. The term 'eutrophication' is related to

- (a) air pollution ( )
- (b) soil pollution ( )
- (c) noise pollution ( )
- (d) water pollution ( )

( 4 )

SECTION—II

( Marks : 15 )

Write notes on the following :

3×5=15

1. Photosynthetic apparatus

**( 5 )**

**2. Structure of mitochondria**

( 6 )

**3. Seed dormancy**



**( 7 )**

**4. Polysaccharides**

( 8 )

**5. Ecological pyramids**

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