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(CBCS)

(3rd Semester)

BOTANY

THIRD PAPER

(Plant Physiology, Biochemistry and Ecology)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

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

- 1.** Define photosynthesis. Describe the mechanism of light reaction in photosynthesis. 2+8=10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Water absorption
- (b) Photorespiration
- (c) Stomatal transpiration

- 2.** What is glycolysis? Give a brief account of the process of glycolysis. 2+8=10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Oxidative phosphorylation
- (b) Biological nitrogen fixation
- (c) Mechanism of enzyme action

- 3.** What is phytochrome? Explain the structure and function of phytochrome. 2+8=10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Role of gibberellins in plants
- (b) Vernalization
- (c) Photoperiodism

- 4.** Write an account on protein synthesis. 10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Classification of carbohydrates
- (b) Semi-conservative DNA replication
- (c) DNA polymerase

(3)

5. Briefly describe different characteristics of population. 10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Food chain and food web
- (b) Abiotic environment
- (c) Energy flow in an ecosystem

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Subject Code : BOT/III/EC/05

Booklet No. A

Date Stamp

To be filled in by the Candidate

CBCS

DEGREE 3rd Semester

(Arts / Science / Commerce /
) Exam., **2017**

Subject

Paper

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 1 (one) Hour 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.

**To be filled in by the
Candidate**

CBCS

DEGREE 3rd Semester

(Arts / Science / Commerce /) Exam., **2017**

Roll No.

Regn. No.

Subject

Paper

Descriptive Type

Booklet No. B

Signature of
Scrutiniser(s)

Signature of
Examiner(s)

Signature of
Invigilator(s)

BOT/III/EC/05

2 0 1 7

(CBCS)

(3rd Semester)

BOTANY

THIRD PAPER

(Plant Physiology, Biochemistry and Ecology)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Select the correct answer by putting a Tick (✓) mark in the
brackets provided : 1×10=10

1. The first product of C₄ pathway is

(a) oxaloacetic acid ()

(b) RuBP ()

(c) PGA ()

(d) PGAL ()

/53

(2)

2. The most abundant element present in the plants is

- (a) nitrogen ()
- (b) manganese ()
- (c) iron ()
- (d) carbon ()

3. Krebs cycle takes place in

- (a) mitochondria ()
- (b) cytoplasm ()
- (c) grana ()
- (d) endoplasmic reticulum ()

4. The enzyme for electron transport chain (ETC) is present in

- (a) cytoplasm ()
- (b) matrix ()
- (c) outer mitochondrial membrane ()
- (d) inner mitochondrial membrane ()

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(3)

5. Ethylene is employed for

- (a) increasing light ()
- (b) stimulation of cell division ()
- (c) ripening of fruit ()
- (d) apical dominance ()

6. In higher plants, cell elongation is due to hormone

- (a) florigen ()
- (b) auxin ()
- (c) cytokinin ()
- (d) gibberellin ()

7. The formation of polypeptide from mRNA is called

- (a) translocation ()
- (b) transcription ()
- (c) translation ()
- (d) transformation ()

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(4)

8. Which of the following carbohydrates is insoluble in water?

- (a) Monosaccharides ()
- (b) Oligosaccharides ()
- (c) Polysaccharides ()
- (d) Both (b) and (c) ()

9. Chlorofluorocarbons (CFCs) cause

- (a) depletion of ozone layer ()
- (b) depletion of CO₂ ()
- (c) increase of ozone layer ()
- (d) increase of CO₂ ()

10. An association of two species in which both species are benefited is called

- (a) commensalism ()
- (b) competition ()
- (c) protocooperation ()
- (d) mutualism ()

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(5)

SECTION—B

(Marks : 15)

Write short notes on the following :

3×5=15

1. Water potential and its role in plants

Or

CAM plants

(6)

2. Structure of mitochondria

Or

Anaerobic respiration

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(7)

3. Dormancy of seeds

Or

Senescence

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(8)

4. Structure of amino acids

Or

Transcription

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(9)

5. Ecotypes

Or

Carbon cycle

8G—450/53

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