

2016

M.Sc.

3rd Semester Examination

BOTANY

PAPER—BOT-301

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Use separate answer scripts for each Units.

UNIT—I

(Marks : 20)

Answer Q. No. 1 & 2 and any one of the rest.

1. Answer any *five* from the following : 5×1
- (i) Name two light regulating enzymes of C_4 cycle.
 - (ii) What is leghaemoglobin ?
 - (iii) What do you mean by autocatalytic action of ethylene ?

(Turn Over)

- (iv) What is symbiosome ?
- (v) What is scarification ?
- (vi) What is oxidative phosphorylation ?
- (vii) How does defruiting delay senescence of the whole plant ?
- (viii) What is the common feature of the structure of NAA and IAA ?

2. Write short notes on any *two* of the following : $2 \times 2 \frac{1}{2}$

- (i) Nitrate assimilation in plants.
- (ii) Phytochrome.
- (iii) Bioassay of cytokinin.
- (iv) Biochemical changes during seed germination.

3. (a) Describe the mechanism of NADPH production in the chloroplast.

(b) Explain the dual role in RUBISCO.

6+4

4. (a) In the light of recent knowledge explain the role of auxin in cell extension.

(b) Schematically represent the biochemical pathway of Craosulacean acid metabolism.

5+5

UNIT—II

(Marks : 20)

Answer Q. No. 5 & 6 and any one from the rest.

5. Answer any *five* from the following : 5×1
- (i) What is entropy ?
 - (ii) Name two aromatic amino acids.
 - (iii) What is Glutathione ?
 - (iv) What is glycosidic linkage ?
 - (v) Define ribozyme.
 - (vi) Mention the significance of K_m .
 - (vii) Name one essential fatty acid.
 - (viii) What is inducible enzyme ?
6. Write short notes on any *two* of the following : $2 \times 2 \frac{1}{2}$
- (i) Ramachandran plot.
 - (ii) Oligosaccharides and polysaccharides.
 - (iii) Thin layer chromatography.
 - (iv) Non-competitive inhibition of enzyme action.

7. (a) Describe the primary and higher order structures of proteins.
- (b) Differentiate between essential and non-essential amino acids.
- 7+3
8. (a) Briefly describe the process of β -oxidation of fatty acids.
- (b) Differentiate between α -oxidation and β -oxidation of fatty acids.
- (c) What is saponification number?

6+2+2