2009

M.Sc.

3rd Semester Examination

BOTANY

PAPER—XIII

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.

Write the answers to the questions of each Unit in separate books.

UNIT—I

1. Answer any *five* of the following :   1×5

   (a) What is photon ?

   (b) What is the first product of Photosynthetic reaction ?

   (c) What is 'Redox Reaction' ?

   (d) Why do cells use energy ?

   (e) What do you mean by P 700 reaction center ?

(Turn Over)

(f) Why do CAM plants close their stomata during the day time.

(g) What do you mean by biological nitrogen fixation.

(h) Name two free living aerobic nitrogen fixing bacteria.

(i) What is chemiosmosis ?

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

   (a) Photophosphorylation.

   (b) Role of phytochrome in flowering.

   (c) RuBP carboxylase.

   (d) Cyclic elutron flow.

3. Answer any *one* of the following : 1×10

   (a) What are plant growth regulators ? What are the basic differences between plant growth regulators and plant hormones ? Name four plant growth regulators. Write down the structure and function of kinetin and Abscisic acid.

   $1+2+2+5$

   (b) What is seed dormancy ? Mention its types. What are the physical and Morphological methods of breaking seed dormancy ? Mention the significance of seed dormancy.

   $1+3+4+2$

UNIT—II

Answer any *five* of the following:

1×5

4. (a) Name one non protein amino acid.

 (b) Define pH.

 (c) What do you mean by 'essential amino acids'?

 (d) What is co-enzyme? Give an example.

 (e) Define unsaturated fatty acid.

 (f) What is allosteric enzyme? Give an example.

 (g) Write down the full form of HPLC.

 (h) Define iso-enzyme. Give an example.

5. Write the short-notes on any *two* of the following :

$2\frac{1}{2}\times 2$

 (a) Competitive and non competitive inhibition of enzyme function.

 (b) GLC–principles and functions.

 (c) β-oxidation of fatty acids.

 (d) Homopolysaccharides and Heteropolysaccharides.

(Turn Over)

6. Answer any *one* of the following :   10×1

    (a) What are the principles of gelelutrophoresis and TLC ?
Write down the utility of TLC and gelelutrophoresis
in analytical research.

                                                5+5

    (b) What do you mean by primary structure of a protein ?
What do you understand by α-helix and β-sheet
structure of it ? What do you mean by asymetric
carbon and peptide bond ?

                                                1+7+2

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TB—150