This question paper contains 4 printed pages]

Roll No.

S. No. of Question Paper : **1848**

Unique Paper Code : **217675**   E

Name of the Paper : **22-Plant Systematics and Physiology**

Name of the Course : **B.Sc. (App. Life Sciences) Agrochemical and Pest Management**

Semester : **VI**

Duration : **3 Hours**   Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt Sections A and B on separate sheets.

Question No. 1 of both sections is compulsory.

Attempt *three* questions from Section A and

three questions from Section B including question number 1 of both sections.

Attempt all parts of the question together.

SECTION A

1. (*a*) Expand :   2.5

   (*i*) DC

   (*ii*) Wall

   (*iii*) IAPT

   (*iv*) *sp. nov.*

   (*v*) *nom. nud.*

P.T.O.

(b) Give the type name of type genus and the alternate name of the following families : 3

    (i)   Leguminosae

    (ii) Palmae

    (iii) Guttiferae.

(c) Give the endings of the ranks provided by the ICN : 3

    (i)   Division

    (ii) Class

    (iii) Tribe.

(d) Expand the citations : 4

    (i)   X Pyronia

    (ii) Carex kashmirensis Clarke in Hook. f.

    (iii) Phyllanthus Linn. Emend. Mull.

    (iv) Lupinus [Tourne.] Linn.

(e) Name the person who had introduced binomial nomenclature and the person who had established it. 1

2. Differentiate between any three : 3×4=12

    (i)   Flora and Monograph

    (ii) Basionym and Tautonym

    (iii) Annotation label and Herbarium label

    (iv) Isotype and Syntype.

3. (a) Give an outline of Bentham and Hooker's system of classification. 　　4

 (b) Write any *four* merits and *four* demerits of Bentham and Hooker's system. 　　8

4. Write short notes on any *three* : 　　　　3×4=12

 (a) Taxonomic species concept

 (b) Role of computers in identification

 (c) Limitations of principle of priority

 (d) Typification

 (e) Dichotomous keys.

SECTION B

1. (a) Define the following : 　　　　1×5=5

 (i) Relative humidity

 (ii) Hydroponics

 (iii) Photorespiration

 (iv) Apoplast

 (v) Polyamines.

 (b) Expand the following : 　　　　0.5×5=2.5

 (i) PAR

 (ii) NADPH

 (iii) ABA

 (iv) CAM

 (v) RUBISCO.

(*c*) State whether the following statements are True or False : 1×6=6

(*i*) ABA is a hormone which promotes fruit ripening.

(*ii*) Inhibitors of photosynthetic electron transport are effective herbicides.

(*iii*) Photosynthesis involves two photo systems. one driven by short-wavelength light and the other driven by long-wavelength light.

(*iv*) An action spectrum is a graph that shows the effectiveness of light in inducing a particular process plotted as a function of wavelength.

(*v*) *Rhizobium* is an example of a free living nitrogen fixing bacterium.

(*vi*) Cyclic and non-cyclic phosphorylation occurs in mitochondria.

2. Write short notes on any *three* of the following : 3×4=12

(*a*) Cohesion theory

(*b*) Physiological basis of mineral deficiency

(*c*) Kreb's cycle

(*d*) Commercial applications of Auxins.

3. (*a*) Explain the oxidative pentose phosphate pathway and its significance in plant development. 6

(*b*) Comment briefly on the effect of light and wind on the process of transpiration. 6

4. (*a*) Describe the process of *Rhizobium* infection and nodule development in legumes. 6

(*b*) With the help of a flow diagram discuss the process of glycolysis. 6