This question paper contains **4** printed pages]

Code No. : 04(II) *Roll No. .....*

0(CCEM)9

BOTANY

Paper : II

Time Allowed : 3 hours] *[Maximum Marks : 300*

Note : (i) Answers must be written in English.

(ii) Number of marks carried by each question are indicated at the end of the question.

(iii) Part/Parts of the same question must be answered together and should not be interposed between answers to other questions.

*(iv) **The answer to each question or part thereof should begin on a fresh page.***

*(v) **Your answers should be precise and coherent.***

*(vi) Candidates should attempt Q. No. **1** and **5** which are **compulsory** and **three** of the remaining questions selecting at least **one** question from each Section.*

(vii) Provide diagrams in the answer-book wherever necessary.

P. T. O.

SECTION – A

1. Write notes on any *six* of the following :

(a) Southern blotting

(b) ATPases

(c) Polyteny

(d) Lac operon

(e) Metric inheritance

(f) Genetic code

(g) Wobble hypothesis

(h) Petite yeast $6 \times 10 = 6$

2. (a) What is DNA fingerprinting ? Describe its role i detection of a particular gene in a variety o plants.

(b) Elucidate the types and effects of point mutations

(c) Explicate and differentiate various kinds o genetic and non-genetic RNAs. $3 \times 20 = 6$

3. (a) What is the significance of polymerase chair reaction in recombinant DNA technology Discuss.

(b) Differentiate between chromoplast and chromatophore and give a detailed description o chloroplast.

(c) Giving suitable examples, explain the phenomenon of polygenic inheritance. $3 \times 20 = 6$

4. (a) Give a detailed account of the mechanisms of genetic recombination in bacteria.

(b) Write an explanatory note on the production of transgenic organism giving example of Bt cotton.

(c) Justify the theory of organic evolution on the basis of evidences. $3 \times 20 = 60$

SECTION – B

5. Write notes on any *six* of the following :

(a) Ascent of sap

(b) Photorespiration

(c) Senescence

(d) Afforestation

(e) Parthenocarpy

(f) Succession

(g) Ecological pyramids

(h) Pesticides $6 \times 10 = 60$

6. (a) Describe various mechanisms of transport of mineral nutrients. How do the ions enter into the stele even in the presence of Casparian strips ? Explain.

(b) What is the significance of electron transport system in the light dependent phase of photosynthesis ? Clarify.

(c) Classify and elucidate the growth movements in plants. $3 \times 20 = 60$

7. (a) Describe the role of growth regulators in t development of plants.

(b) With the help of suitable examples, illustrate t components and functioning of aquatic ar terrestrial ecosystems.

(c) Give an outline sketch of forests types of Indi Which forest type is predominantly occupying th Indian subcontinent ? Substantiate your answe with concrete evidences. $3 \times 20 = 6$

8. Write the Botanical names, systematic position and economic importance of the following :

(a) Buckwheat

(b) Caraway

(c) Beet root

(d) Spruce

(e) Lavender

(f) Garlic

(g) Sweet orange

(h) Cashew nut

(i) Safflower

(j) Nutmeg

$10 \times 6 = 60$