

2010**M.Sc.****2nd Semester Examination****BOTANY****PAPER—X**

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.

Answer all questions.

1. Answer any ten of the following : 1×10
- (a) What are somatic hybrids ?
 - (b) What is G-banding ?
 - (c) What is the basic mechanism of sympatric speciation ?
 - (d) What is meristemoid ?
 - (e) Why is 'pure line selection' names so ?
 - (f) What is the significance of 'NOR' ?
 - (g) How is the element considered as 'Macro' or 'micro' in plant culture medium ?
 - (h) What is chromosome walking ?
 - (i) Name the chemical compound used as nitrogen source in MS medium.

(Turn Over)

- (j) How does migration violates the Hardy-Weinberg principle ?
- (k) Name the regions of chromatin remaining attached with nuclear membrane.
- (l) What is Pedigree selection ?
- (m) How is an isolated protoplast proved to be live ?
- (n) What is GISH ?

2. Write notes on any *two* of the following : 5×2

- (a) Quantum speciation.
- (b) DNA fingerprinting.
- (c) Gene cloning vectors.
- (d) Hardy-Weinberg Principle.

3. Answer any *two* of the following : 10×2

- (a) How some characters (traits) are identified as to be of extranuclear inheritance ? Name different types of such inheritance. Illustrate the nature of maternal inheritance with suitable example. 3+2+5
- (b) Why do the eukaryotic chromosomes remain linear and do not circularize ? Give an account of the molecular architecture of chromosomal end part. Which enzyme is responsible for executing its synthesis. 2+7+1
- (c) What is meant by micropropagation ? Describe the pathways of micropropagation that are employed in cloning of plants. How does an organogenic callus differ cytologically and anatomically from a friable one ? Mention the significance of micropropagation. 1+5+2+2