

CS/2110

5502/NH

Recombinant DNA Technology (BHB24)

Attempt two question from the each Section A and B and the section C is compulsory

Time 3 hrs

MM :74

Section A

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|---|---|--|----|
| 1 | a | Elaborate the types of Restriction endonucleases | 5 |
| | b | Write down the principle and application of polymerase chain reaction | 6 |
| 2 | | What are the features of a good vector? Briefly describes the features for a one Plasmid and one phage vector of <i>E.coli</i> | 11 |
| 3 | a | Write a note on 1. Microinjection, 2. Ultrasonication | 6 |
| | b | Discuss the properties of cDNA and cDNA libraries | 5 |
| 4 | a | Briefly explain the role of ES cells in gene targeting in mice | 6 |
| | b | Write down the note on 1. DNA fingerprinting, 2. Genome mapping | 5 |

Section B

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|---|--|--|----|
| 5 | | Elaborate the Primer extension and PCR based methods in site directed mutagenesis. | 11 |
| 6 | | Define chimeric proteins. Discuss the production of chimeric proteins | 11 |
| 7 | | Elaborate the bacterium -mediated gene transfer method discuss its merits and demerits. | 11 |
| 8 | | What are the various direct gene transfer methods, Discuss any Electroporation and particle gun method in details. | 11 |

Section C

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|---|------|-------------------------------------|----|
| 9 | | Explain the following (15x2) | 30 |
| | i | Recognition sequences | |
| | ii | ligases | |
| | iii | Shuttle vectors | |
| | iv | Episome | |
| | v | RT-PCR | |
| | vi | Restriction mapping | |
| | vii | Southern hybridization | |
| | viii | cDNA library | |
| | ix | Reverse transcription | |
| | x | Random mutagenesis | |
| | xi | Gene shuffling | |
| | xii | Chimeric proteins | |
| | xiii | Ti-plasmid | |
| | xiv | Reporter gene | |
| | xv | Lipofection | |