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Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (Agriculture) (2014 & Onwards) (Sem.-7)

INTRODUCTION TO MOLECULAR BIOTECHNOLOGY

Subject Code : BSAG-702

M.Code : 74825

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Q1. Write short notes on :**

- a) Operons
- b) Histones
- c) Transformation
- d) Gene tagging
- e) Mapping population
- f) Hot start PCR
- g) Marker assisted gene pyramiding
- h) Genome
- i) Repetitive DNA
- j) Synonymous and nonsynonymous SNPs





SECTION-B

- Q2. a) What is the basis of polymorphism of RAPD markers?
- b) Write any two features of the primers used for development of RAPD markers.
- c) Name two dominant and co-dominant markers each.
- Q3. Write a short note on selection of transformed cells in a cloning experiment.
- Q4. a) Who first discovered restriction endonucleases?
- b) Define Cohesive ends and examples of enzymes producing cohesive ends.
- c) What are the major differences between genome organizations among eukaryotes and prokaryotes?
- Q5. a) Define Gene Cloning and competent cells.
- b) Describe the principle and applications of Marker Assisted Selection.
- Q6. What are the functions of various important components of a PCR reaction? How can you determine the annealing temperature of a primer?

SECTION-C

- Q7. Define genomic library. Write in details the steps for the construction of genomic libraries and their applications.
- Q8. a) Discuss the principle of Sanger sequencing technique.
- b) Define NextGen sequencing techniques. Name any two techniques. What are various applications for which sequencing data could be utilized?
- Q9. What is the principle of Southern hybridization? Write in detail its procedure and applications.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

