

5127

Name of the Paper: Genetics, Biotechnology and Immunology.

Name of the Course: B.Sc. (Prog.) Applied Life Science (III Year)

Duration: 3 Hours

Maximum Marks: 75

D

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt SIX questions in all. Question no.1 from Section A and Question no. 1 and 2 from Section B are compulsory.
3. Support your answers with suitable diagrams wherever required.

SECTION A

1. (i). Define the following: (5)
 - a. Karyotype
 - b. Euployploidy
 - c. Satellite DNA
 - d. Extranuclear inheritance
 - e. Genomic Library
- (ii). Expand the following (6)
 - a. SCP
 - b. cDNA
 - c. PCR
 - d. snRNA
 - e. GMO
 - f. RAPD
- (iii). Differentiate between the following (8)
 - a. Southern and Western Blotting
 - b. DNA and RNA
 - c. Plasmid and Cosmid
 - d. Lampbrush and Polytene chromosome
2. a. Describe the experiments which proved DNA as the Genetic material. (6)
b. State the various laws of inheritance given by Mendel. (6)
3. a. What is DNA Fingerprinting? (2)
b. Discuss the various steps involved in DNA Fingerprinting. (10)

4. Write any essay on the application of Biotechnology. (12)
5. a. What is Mutation? (2)
b. Briefly discuss the mechanism of Mutation. (5)
c. What do you understand by chromosomal aberrations? (5)

SECTION B

1. Write short notes on any **TWO** of the following: (5x2)
- a. Vaccines
 - b. AIDS
 - c. Cytokines
 - d. Autoimmune diseases
2. Differentiate between the following: (2.5x4)
- a. Humoral and Cell mediated response
 - b. B cells and T cells
 - c. Immunogens and Haptens
 - d. Acquired and Innate Immunity