Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

FACULTY OF APPLIED SCIENCE

B.Sc. / IMSC, Summer 2017-18 Examination

Semester: 4 / 6 **Date: 08/05/2018**
Subject Code: 11102254 **Time: 02:00PM to 04:30PM**
Subject Name: Recombinant DNA Technology **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1. A) Essay type (Each of 04 marks) **(08)**
(a) Write a detailed note on Agrobacterium-mediated gene transformation method

Q.1. B) Answer the following questions (Any two)
(a) Short note (Each of 02 marks) **(04)**
1. Write any two characteristics of a good vector
2. Write down the different methods for Nucleic acid Purification
(b) Write short note on Southern hybridization **(04)**
(c) Describe steps involved in PCR in detail. **(04)**

Q.2. A) Answer the following questions.
(a) Short note (Each of 02 marks) **(04)**
1. Name the two radioactive isotope most often used to detect nucleic Acid.
2. Which are physical and chemical gene transfer method?
(b) Give detail about non radio active labeling (any two) **(04)**

Q.2. B) Answer the following questions (Any two)
(a) Multiple choice questions (Each of 01 marks) **(03)**
1. In recombinant DNA technology, a selected gene is removed from an animal, plant, or microorganism, and is inserted into what?
(A) primer (B) A cloning host
(C) vector (D) A palindrome
2. Genomic library is normally made by
(A) α phage vectors λ phage vectors
(C) β phage vectors γ phage vectors
3. _____ is chemical method for gene transfer
(A) electroporation (B) A gene gun
(C) Calcium phosphate method (D) microinjection
(b) Describes Nick translation **(03)**
(c) Short note on Blue white screening **(03)**

Q.3. A) Brief note (Each of 04 marks) **(08)**
(a) Short note on construction of cDNA library
(b) Short note on herbicides resistant plants

Q.3. B) Answer the following questions (Any two)
(a) Short note (Each of 04 marks) **(04)**
1. Describe any one DNA sequencing method
(b) Write a detailed note on any four applications of r DNA technology in medicinal field. **(04)**
(c) Short note on insect resistant plants. **(04)**

Q.4. A) Answer the following questions.
(a) Short note (Each of 02 marks) **(04)**
1. What is Mutagenesis?
2. What is hybridization?
(b) Short note on genomic library **(04)**

Q.4. B) Answer the following questions (Any two)
(a) Multiple choice question (Each of 01 marks) **(03)**
1. Transgenic plants are developed by
(A) Introducing foreign genes (B) Introducing gene mutation
(C) Deleting certain chromosome parts (D) Stopping spindle formation
2. Golden rice was formed by rdt of which 2 genes?
(A) psy, lcy (B) psy, crt 1
(C) crt 1, lcy (D)crt 1, crt E

3. ___ is a map of known restriction sites within a DNA sequence.

(A) Foot print analysis (B) Primer entension

(C) Restriction map (D) Promoter map

(b) Short note on RT-PCR **(03)**

(c) Describe Antisense technology **(03)**