## PARUL UNIVERSITY FACULTY OF APPLIED SCIENCE B.Sc./IMSc Winter 2017-18 Examination

Enrollment No: \_\_\_\_\_

<b>D.SC/INISC WINTER 2017-16 Examination</b>	JII
Semester: 3 Subject Code: 11102201 Subject Name: Genetic Engineering	Date: 27/12/2017 Time: 10.30 am To 1.00 pm. 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) Discuss PCR. Give the role of each component in the PCR react	ion mix. (08)
Q.1. B) Answer the following questions (Any two)	
(a) Give the schematic representation for: 1. SCNT 2. Ti plasmi	d (04)
(b) Write a note on Western blotting.	(04)
(c) Using 4 examples explain in brief how genetic engineering can b agriculture.	be used in the field of (04)
Q.2. A) Answer the following questions.	
(a) Explain plantibodies with examples.	(04)
(b) Differentiate between knock out and knock in mouse models.	(04)
Q.2. B) Answer the following questions (Any two)	
(a) What is the principle of pyrosequencing?	(03)
(b) What are the applications of flow cytometry.	(03)
(c) Short note: Types of probes.	(03)
Q.3. A) Explain oligonucleotide synthesis in detail.	(08)
Q.3. B) Answer the following questions (Any two)	
(a) Give the schematic representation for: 1. Single step PCR assem 2. ZFN	bly for gene synthesis. (04)
(b) Explain the 2 models of sex determination in animals.	(04)
(c) Give the schematic representation of HPLC MS/ MS and state it	s applications. (04)
Q.4. A) Answer the following questions.	
(a) Define: 1. Inverse PCR 2. Model organisms.	(04)
(b) Draw the life cycle of <i>C. elegans</i> .	(04)
Q.4. B) Answer the following questions (Any two)	
(a) Differentiate between random mutagenesis and site directed mut	agenesis. (03)
(b) What are the various applications of DNA fingerprinting?	(03)
(c) State the various post transcriptional modifications.	(03)