

C.U.SHAH UNIVERSITY

Summer Examination-2016

Subject Name : Genetic Engineering

Subject Code : 4SC04GEE1

Branch: B.Sc.(Biotechnology)

Semester : 4

Date : 12/05/2016

Time : 02:30 To 05:30

Marks : 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1	Attempt the following questions:	(14)
	a) Define genetic engineering.	1
	b) What are restriction enzymes?	1
	c) What are endonuclease enzymes?	1
	d) What is role of SDS in DNA isolation?	1
	e) Write name of components required in PCR process.	1
	f) What is main difference between RFLP and AFLP?	1
	g) Define recombinant proteins.	1
	h) Define plasmid.	1
	i) Draw the diagram of pUC ¹⁹ plasmid.	1
	j) Define gene cloning.	1
	k) What is <i>LAC</i> operon?	1
	l) Enlist vectors, which can be used to transfer gene.	1
	m) In a restriction digestion of DNA following sequences were found. Ab, dcf, fe, bdc. construct a genetic map based on above data.	1
	n) What is cDNA?	1

Attempt any four questions from Q-2 to Q-8

Q-2	Attempt all questions	(14)
	Write a note on gene cloning and its applications in detail	14
Q-3	Attempt all questions	(14)
A	Explain process of bacterial DNA purification	7
B	Write a note on gene manipulation in DNA	7



Q-4	Attempt all questions	(14)
A	Explain types of restriction enzymes in detail.	7
B	Describe DNA and RNA markers.	7
Q-5	Attempt all questions	(14)
A	Explain modification enzymes and their role in gene manipulation.	7
B	Explain any one plasmid in detail with diagram.	7
Q-6	Attempt all questions	(14)
A	Explain “Blue-white colony selection” method.	7
B	Explain Polymerase chain reaction in detail.	7
Q-7	Attempt all questions	(14)
A	Explain AFLP in detail with process diagram.	7
B	Explain any one nucleic acid sequencing method in detail with diagram.	7
Q-8	Attempt all questions	(14)
A	Explain process of production Insulin from <i>E.Coli</i> .	7
B	Write a note on gene therapy with one example.	7

