

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Biomolecular Engineering

Subject Code: 4SC05BME1

Branch: B.Sc. (Microbiology)

Semester: 5 Date : 02/12/2015 Time :2:30 To 5:30

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.
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Q-1 Attempt the following questions:- (1x14=14)

- a) Extra chromosomal double stranded DNA present in bacteria is known as.....
- b) What is EcoRI ?
- c) 20 A° will be equal to how many nanometer?
- d) In plasmid MCS stands for.....
- e) Write name of one (commonly used) plasmid.
- f) What is copy number of a plasmids?
- g) 1 meter=.....nm
- h) What is X-RD?
- i) RDT stands for.....
- j) What is the net charge on DNA?
- k) True or False-
“Ti plasmid never induce tumor ”
- l) True or False-
“During agarose gel electrophoresis DNA moves from +Ve to –Ve electrode”
- m) Write full form of IPTG.
- n) Write full name of *E.coli*.

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

Q-2 Attempt all questions

- a) What is transduction? Comment on its role in genetics. **3+4**
- b) What do you mean by genetic engineering? Explain the role of genetic engineering in service of mankind. **2+5**



Q-3	Write short notes on-	
a.	Bacterial plasmids	7
b.	DNA ligation	7
Q-4	What is bacteriophage? Draw its structure and explain the lytic and lysogenic cycle of bacteriophage.	(1+3+5+5)
Q-5	Write short notes on-	
a.	Biosensors	7
b.	Restriction endonucleases	7
Q-6	Write short notes on-	
a.	Properties of nano materials	7
b.	Vectors	7
Q-7	Attempt all questions	
a.	What is drug delivery system? Explain the role of Nanomedicine in treatment of disease.	2+5
b.	Briefly explain the process of Blue-White selection for selecting recombinant cells.	7
Q-8		
a.	Explain the chemical methods used for synthesis for nano structures.	7
b.	How will you separate the target DNA fragment from a mixture of DNA fragments, generated after restriction digestion? Support your answer with suitable techniques with diagram.	7

