

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)  $20 \text{ \AA}$  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

