

**GUJARAT NATIONAL LAW UNIVERSITY  
GANDHINAGAR**

Course: Biotechnology  
Semester-II (Batch: 2016-21)

End Semester Examination: April-May 2017

Date: 9<sup>th</sup> May, 2017

Duration: 2 hours

Max. Marks: 40

**Instructions:**

- Read the questions properly and write the answers in the given answer book.
- The respective marks for each question are indicated in-line.
- Do not write any thing on the question paper.
- Indicate correct question numbers in front of the answers.
- No questions or clarifications can be sought during the exam period, answer as it is, giving reason, if any.
- Draw diagrams wherever necessary (only with pencil).

- |   | <b>Marks</b>    |
|---|-----------------|
| <p>Q.1 Answer <b>any four</b> of the following briefly:</p> <p>(a) What are the three main goals of CBD?</p> <p>(b) Write short notes on mitochondrial DNA analysis.</p> <p>(c) What is APHIS? What is its main role?</p> <p>(d) Why is myeloma cells used in hybridomas?</p> <p>(e) Write short notes on Cartagena protocol on biosafety.</p>  | <p>(4x2=08)</p> |
| <p>Q.2 Answer <b>any four</b> of the following:</p> <p>(a) What is bio-remediation? What is the purpose of adding fertilizers and oxygen to a contaminated site that is undergoing bio-remediation?</p> <p>(b) Give an account of molecular farming from transgenic plants with emphasis on "Cyclodextrins" and PHB's.</p> <p>(c) What is gene therapy? Why is cystic fibrosis a favorite candidate for gene therapy?</p> <p>(d) What is an extra cellular matrix? Briefly discuss its role in tissue engineering?</p> <p>(e) What are the basic principles of the Belmont report?</p>  | <p>(4x3=12)</p> |
| <p>Q.3 Answer <b>any four</b> of the following:</p> <p>(a) What is meant by Gene knock out technology? How is it different from transgenic technology? How will you create a knock out mouse? Explain.</p> <p>(b) Explain the role of <i>A. Tumefaciens</i> in gene transfer and add a note on Ti plasmid.</p> <p>(c) As a plant biotechnologist describe various methods you can use for restoring degraded lands.</p> <p>(d) Describe micro-injection mediated gene transfer in animals.</p> <p>(e) You received an e-mail from ACDC (Americans for Cloning Dead Celebrities), asking for a donation to support the cloning of a famous pop star Ms. Pop who was lost in a plane crash that dived into java sea. No remains of her body were found.</p> | <p>(4x5=20)</p> |

Your friend who is a great fan of Ms. Pop sends 100 US \$ to ACDC.

- (i) Do you think your friend will achieve in cloning process? Explain your answer.

A few months later, you happened to watch a documentary on cell banks and organ transplants, where a lady named Ann claims to have received Pop's kidney during a kidney transplant.

- (ii) Briefly outline the steps by which Ms. Pop could be cloned with the help of Ms. Ann.

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