



SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Technology (Agriculture)
Second Year, Second Semester Examination – 2015
AG2213- Principles of Biotechnology.

Instructions for Candidates:

Answer all questions in part I & any two (2) questions from part II
All questions do not carry equal marks.

No. of questions : 05
No. of pages : 03
Time : One and half (1 ½) hours

Index Number:

Part I

Q1. (Total 20 marks)

- i. Define the term “Genetic engineering” (6 marks)

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- ii. Name three industries which are using biotechnology. (6 marks)

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- iii. Name four new tools used in disease diagnosis in biotechnology. (8 marks)

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Q2. (Total 20 marks)

- i. Write the order of nitrogenous bases in the other strand of the DNA double helix structure given below. (6 marks)

A G G - C T C - A A G - T C C

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- ii. What is a “codon”? (6 marks)

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- iii. Give four importance of plant tissue culture. (4 marks)

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- iv. What is a DNA Vaccine? (4 marks)

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PART- II

Q3. (Total 30 marks)

- i. Briefly explain the basic requirements for plant tissue culture. (10 marks)
- ii. Describe the main steps involved in plant tissue culture. (10 marks)
- iii. Explain the problems related to plant tissue culture. (10 marks)

Q4. (Total 30 marks)

- i. Discuss the advantages of biotechnology in relation to agriculture. (10 marks)
- ii. Explain the continuous type bioreactors. (10 marks)
- iii. Briefly explain the term “genetically modified food”. (10 marks)

Q5. (Total 30 marks)

- i. What is recombinant DNA technology? (5 marks)
- ii. Explain the following terms used in biotechnology. (15 marks)
 - a. Restriction enzyme.
 - b. Ligase.
 - c. Polymerase enzyme.
- iv. Describe the basic steps in recombinant DNA technology. (10 marks)