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**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

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

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**Higher National Diploma in (Agriculture)  
Second Year 2<sup>nd</sup> Semester Examination – 2016  
AG2213- Principles of Biotechnology**

**Instructions for Candidates:**

Answer all questions from part I and any two (02) from part II

All questions do not carry equal marks

Time allowed : 1 ½ Hrs.

No. of pages : 03

No. of questions : 05

**Index Number:** .....

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**PART-I**

**Q1: (Total 20 marks)**

i. Define the term “Bioreactor”?

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.....  
..... (06 marks)

ii. Name three (03) basic types of bioreactors based on their mode of operation?

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.....  
..... (06 marks)

iii. List four uses of bioreactors?

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.....  
.....  
..... (08 marks)

**Q2. (Total 20 marks)**

i. Define the term “Bio-Fertilizer”

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.....  
.....  
..... (06 marks)

ii. Name three (03) bacteria used to improve the fertility of an agriculture soil?

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.....  
..... (06 marks)

iii. Name two (02) “disease diagnosis techniques” derived from bio-technology?

.....  
..... (04 marks)

iv. Name two (02) applications of animal cell culture?

.....  
..... (04 marks)

## **PART- II**

### **Q3. (Total 30 marks)**

- i. Briefly explain the term “Recombinant DNA Technology”? (10 marks)
- ii. What are the uses of recombinant DNA technology? (10 marks)
- iii. Why aseptic (sterile) condition is important in plant and animal cell culture? (10 marks)

### **Q4. (Total 30 marks)**

- i. Define the term “Plant tissue culture”? (05marks)
- ii. What are the uses of plant tissue culture? (10 marks)
- iii. Briefly explain the major steps involved in plant tissue culture? (15 marks)

### **Q5. (Total 30 marks)**

- i. Briefly explain the following terms in relation to Bio- technology. (15 marks)
  - a. Genetically Modified Foods (GMF)
  - b. Bio-Degradation.
  - c. Plant Tissue culture medium.
- ii. Briefly explain why Bio-technology is not developed in Sri Lanka? (15 marks)