



# 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 – 2016

### AG 2207: Energy and Waste Management

**Instructions for Candidates:**

There are two parts (I, II).

Answer all the questions in Part I on the paper itself.

Answer only two (02) questions from Part II.

All questions do not carry equal marks.

**Index No:** .....

No. of pages : 03

No. of questions : 05

Time : **One and half (1.5) hours**

### Part I

**Question 01:**

- (i) Give two examples for each bio-degradable and non-biodegradable waste. (04 marks)

Bio-degradable waste	Non-Biodegradable waste

- (ii) State five (05) importance of managing waste in the country. (05 marks)

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- (iii) List down the steps of waste management order, in principles of waste management. (05 marks)

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- (iv) Define the terms “Ignitability” and “Reactivity”. (06 marks)

**Ignitability:**.....

**Reactivity:**.....

**(Total 20 Marks)**

**Question 02:**

(i) What do you mean by the term “Anabolism”? (06 marks)

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(ii) Differentiate “Suspended growth” and “Adhered growth” of microorganisms, used in waste water treatment. (06 marks)

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(iii) List down three (03) physical parameters and five (05) chemical parameters considered in biological process of waste treatment. (08 marks)

Physical parameters	Chemical parameters
1.	1.
2.	2.
3.	3.
	4.
	5.

**(Total 20 Marks)**

## PART – II

Answer only two (02) questions.

### Question 03: (Total 30 marks)

- (i) State four (04) types of landfills available in Sri Lanka. (04 marks)
- (ii) Briefly explain the steps of preparation of compost. (08 marks)
- (iii) Explain the stage of “Preliminary” treatment, taken place in sewage treatment process. (08 marks)
- (iv) Explain the working principle of “Reed beds (constructed wet lands)” as a biological treatment process in secondary treatment, with a sketch diagram. (10 marks)

### Question 04: (Total 30 marks)

- (i) Describe the steps of hydropower generation. (08 marks)
- (ii) Discuss the advantages and disadvantages, using of solar power as an energy source. (08 marks)
- (iii) Briefly explain the process of direct solar power (Photovoltaic solar power) generation. (14 marks)

### Question 05: (Total 30 marks)

- (i) Define Air pollution. (03 marks)
- (ii) List down five (05) major air pollutants. (05 marks)
- (iii) Propose and discuss the ways of managing energy, through reduction of transport in Sri Lanka. (10 marks)
- (iv) Discuss the strategies that can be applied on waste management in Sri Lanka. (12 marks)