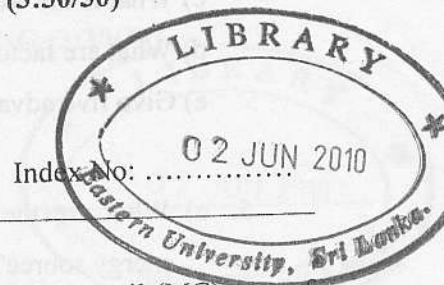


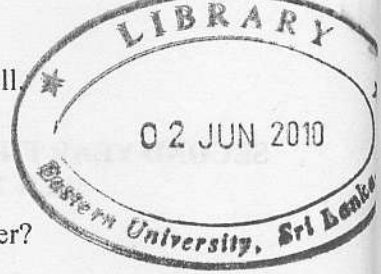
EASTERN UNIVERSITY, SRI LANKA
FACULTY OF AGRICULTURE
SECOND YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE-2007/2008
AEN 2101 ENVIRONMENTAL ENGINEERING (3:30/30)

PRACTICAL EXAMINATION

Time: 2 hours
Answer all Questions



1. a) What are the sources of solid wastes found in the Municipal Council (MC) area of Batticaloa?
- b) List out the types of solid waste generated in the MC area of Batticaloa.
- c) What are the major environmental impacts prevailed in Thirupperunthurai open dumping area?
- d) Give 5 suggestions to reduce the detrimental impacts of solid wastes in open dumping area.
- e) List out the NGO's and institutions involved in the management of solid wastes in MC area of Batticaloa.
2. a) List out four morphological features of mangroves that you observed in Palameenmadu area.
- b) Give five importance of mangroves found in coastal areas of Batticaloa lagoon.
- c) What are the measures taken to protect the mangroves in coastal area of Batticaloa lagoon? (atleast five)
- d) Give three importance of windbreaks in coastal areas.
- e) How would you control the pollution of Batticaloa lagoon? (Give four suggestions)
3. a) Briefly explain the active and passive solar systems. Give 2 examples for each.
- b) Give three important considerations taken during the usage of solar cooker.
- c) Why food in a solar cooker is generally not stirred or turned during cooking?
- d) What is the cooking temperature of solar cooker?
- e) List the advantages and disadvantages of solar cooker.



4. a) Illustrate and explain the solar distillation process of solar still.
b) List out four advantages of solar still.
c) What is the working principle behind the solar drier?
d) What are factors determine the successful drying in solar drier?
e) Give five advantages of solar drier.

5. a) What are the environmental issues associated with usage of fossil fuels as an energy source?
b) List out the major components/parts of hydroelectric plant with their functions.
c) Estimate the potential power output from a hydropower plant based on following details.
Gravitational acceleration = 9.8ms^{-2}
Total hydraulic head = 30m
Water flow rate = $1200\text{m}^3/\text{s}$
d) Briefly explain the two kinds of pumps used in windmills?
e) List out the advantages and disadvantages of geothermal energy?

6. a) What are the four ingredients used in compost making?
b) List out three basic steps of compost making.
c) Write note on types of compost with their duration.
d) Briefly explain the principal operating parameters in biogas production.
e) List out three types of biogas digester and briefly explain the digester which is mostly used in India.
