The Open University of Sri Lanka
Faculty of Engineering Technology
Bachelor of Science in Industrial Studies Program

Final Examination- 2009/ 2010

AEI 6234 Environmental Controls in Farm Structures

Date	: **31.03.2010**
Time	: **1400-1700**
Duration	: **Three (03) hour**.

Answer four questions including question no 1.

1. a) Define the terms stress and strain.
    b) Graphically represent the relationship between stress and strain of a mild steel rod under tension. Clearly label your graph.
    c) Two timber ports which are used in roof of a cattle shed are 200 mm and 5m high. They are subjected to an axial load of 110KN each. One part of the port is made from pine (E=7800N/mm^2) and rest is made from ork timber (E=15300 N/mm^2) How much will they shorten due to the applied force?

2. Write short notes on any three (03) of following topics.
    a) Basic methods of heat transfer
    b) "R" value of an insulation material
    c) Green house effect and global warming
    d) Bag and bulk storage of grains
    e) Practices for altering animal wastes

3. a) Write a summary on importance of maintaining the inside gas level of a cattle barn in Dambulla.
    b) Discuss the major environmental problems in pig belt of Sri Lanka and how to overcome this.

4. Method of cattle rearing is totally different for wet zone (eg:Kandy) and dry zone (eg:Anuradapura) in our country. Critically evaluate this statement using suitable examples.

5. Farm waste management is a huge problem in animal husbandry including poultry, swine and cattle. Explain how you optimize the process of farm waste management in an effective and efficient manner.

6. Write a small essay on application of environmental control structures on agriculture using five examples.