The Open University of Sri Lanka

Faculty of Engineering Technology
Industrial Studies Program
Final Examination- 2007

AEI6234 Environmental control in farm structures

Date : 07-05-2008
Time : 0930-1230 hours

SECTION 2: Answer question 1 and any three others.

(01) (a) Define the terms of "stress" and "strain"?

(b)What is Hooks Law?

(c) Graphically represent the stress strain relationship for mild steel rod?

(d) What is given by stress/stain with in the elastic region?

(e) Two timber posts, cross section area of 40000mm^2 and 6m height, are subjected to an axil load of 100kN each. One post is made of pine timber (E=7800 N/mm^2) and the other is Ork timber (E=15300 N/mm^2). How much will they shorten due to the applied load?

(02) Write short notes on the following topics.
(a) Green house effect
(b) Evaporative cooling
(c) Basic methods of heat transfer
(d) The basic functions of cattle housing

(03) (a) Describe three types of cattle rearing systems?

(b) A farmer in Nuwara Eliya has decided to establish a cattle farm close to his residence (with 20 cattle). He is confusing regarding selection of a suitable cattle rearing system and need advice from you. In this matter, what are your suggestions on suitable method of cattle rearing system? Explain and justify your answer.

(04) (a) Write a brief account on "green house effect"?

(b) What factors have great influence on global warming? Write a short summary on that.

(05) (a) Describe any popular mechanised poultry feeder system in detail. with the aid of a sketch.
(b) Explain how you control the important environmental conditions (especially temperature and light) inside the poultry house?

(06) Releasing of farm waste is a huge problem in small scale as well as the large scale farms (poultry, cattle and swine farms) especially in urban areas. Explain how you optimize the process of farm waste management inside a farm with minimum damage to the environment. Illustrate your answer with possible ways of farm waste management and how you could improve the available methods.