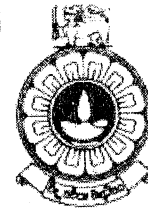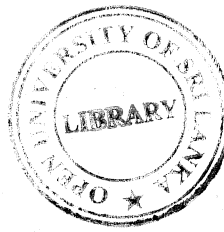THE OPEN UNIVERSITY OF SRI LANKA

BACHELOR OF INDUSTRIAL STUDIES /

BACHELOR OF TECHNOLOGY

FINAL EXAMINATION – 2007/2008

TTX6135 TEXTILE PRODUCT ENGINEERING

DURATION – THREE HOURS

045

DATE: 07 May 2008       TIME: 0930 – 1230 Hours

Total Number of Questions = 09    Number of Questions to be answered = 06

Answer Question 1, which is <u>compulsory</u> and additional five (05) questions.
Question 1 carries twenty-five (25) marks and Questions 2 to 9 carry fifteen (15)
marks each.

## <u>Compulsory Question</u>

01. a. What are the results of design development phase of product creation?

                 (03 marks)

  b. What do you understand by competitive analysis?    (02 marks)

  c. Give an example for obligatory requirement that need to be incorporated in the
product concept.              (02 marks)

  d. Give an example for interdependent requirement of a product concept.

                 (02 marks)

  e. Give two weaknesses of iterative method for designing products.   (04 marks)

  f. What is the advantage of cost benefit analysis in design evaluation? (02 marks)

  g. What is the basic function of a incandescent bulb? Name two secondary
functions of the bulb too.             (03 marks)

  h. What is the basis on which consequentialist theories of ethics determine
whether some activity is ethical or not?        (02 marks)

  i. What do you understand by "life cycle analysis"?     (03 marks)

  j. Give one practical example for value engineering.     (02 marks)

## <u>Answer any five questions from the following eight questions.</u>

02. a. Briefly explain how the product development process could be looked at as a
spiral.                  (05 marks)

  b. Briefly explain the product planning cycle of a product of your choice using a
flow chart.                (07 marks)

  c. What do you understand by the "elevator test"?     (03 marks)

03. a. Why is the "average consumer" is not a satisfactory concept in product designing? Explain with suitable examples. (04 marks)

b. What are the possible alternatives for the "average consumer" concept? Discuss these alternatives with suitable examples. (06 marks)

c. Method of empathy and method of analogy are two methods that are most effective in the search of novel product ideas. What do you understand by these two methods? (05 marks)

04. a. Take a suitable example and explain how the selection of attributes for a product could be done by using conjoint analysis. (09 marks)

b. With a suitable example explain the method of exemplar and improvement in deciding on a product concept. (06 marks)

05. a. What are the various information that can be obtained from market testing? (06 marks)

b. Explain the importance of feedback and critique in the evaluation of product design. What are the different techniques that are used to obtain feedback? (09 marks)

06. Develop a FAST model and prepare the Value Analysis Matrix for the production of a scissor. (15 marks)

07. a. With the help of a suitable example explain how risk could be minimised in an industrial environment. (06 marks)

b. Briefly explain the process of risk management. You can take an example of your choice to explain the process. (09 marks)

08. a. What do you understand by "design to cost"? What are the elements that are included in the design to cost approach? (09 marks)

b. Discuss the importance of taking into consideration of cost factors at the very beginning of the development cycle of a product. (06 marks)

09. a. What are the general principles of ISO14000? (05 marks)

b. Environment friendly product engineering consists of green design, ecology of manufacture, ecology of product use and recycling. Explain each of these aspects of green product engineering (10 marks)